



THE PROJECT LEARNING FOR DISABLED PEOPLE

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Introduction

Outsider association, since many years deals with the recovery of the disabled persons through art and culture. A first experience concerning theatrical activities started in 1994 with sensory disabled persons. The Association operated in this field for many years, today the need of an engagement in the didactic field emerged as well. During the years, the need to address the problem of the disabled adults who are not able to read and write became evident. The problem of these persons often, as in the case of the adult disabled people living in the Cottolengo in Turin, is that they did not attend school.

Outsider association decided to create a literacy course for these persons, the laboratory was conducted by a primary school teacher. Soon a difficulty emerged, which concerned the need of devising a special path in order to teach the Italian language to the some disabled persons. People with intellectual problems need a more intensive stimulation with the use of images and computer. The interactive blackboard represents an effective tool to stimulate the disabled persons to learn to read and write.

The project “I learn” was set up on the base of the following two objectives:

1. Specific teaching;
2. Learn while having fun about the world of Internet

1. The exponential growth of e-learning.



The evolution of technology and the emergence of Internet fuelled the extraordinary success of e-learning in school. The real debut of e-learning is with the development of Internet and of the tools it offers for didactic purpose. The innovative value is that such methodology makes learning easier, while supporting the persons with disability during their didactic experience. E-learning introduces a new attractive element: the simulation. Considering the future of learning in school, the most attractive methodologies seem to be simulation and playing. Today we are faced with a world where

“virtual” communication has an important place, the activities and the interactions among individuals are at the centre stage, which shows the importance of the constructive use of ICT in the educational environment in order to facilitate learning by disabled people.

2. A path to learning

Introducing ICT in training can help the person with difficulty in learning. For disabled people with intellectual problems, visual stimulation can represent a possibility to learn more effectively. This methodology of stimulation with the interactive blackboard helps the teacher, the technology must be accepted as accompaniment toward new directions.

Today in school, teaching is based on old methodologies. The utilization of electronic systems stimulates the desire of learning.

3. Intellectual disability

a) diagnostic features

The fundamental characteristic of mental retardation is an intellectual general functioning significantly below average (Criterion A), accompanied by significant limitations in adaptive functioning concerning at least two of the following areas of performance capacity: communication, personal care, family life, social interpersonal skills, use of community resources, self-determination, ability to function at school, work, leisure, health, and safety (Criterion B). The onset must occur before age 18 (Criterion C).

Mental Retardation has many different etiologies and can be seen as the final common outcome of various pathological processes that affect the functioning of the central nervous system.

The choice of evaluation tools and interpretation of results should take into account factors that may limit the performance (socio-cultural background of the subject, language, disability and communication, motor and sensory combined). When a significant dispersion in scores of different parts of the test occurs, it will be the profile of the scaling and fall, rather than the mathematically calculated IQ of all scales to reflect more accurately the learning ability of the subject. When there is a large discrepancy between verbal and performance scores, averaging to obtain a global IQ score can be misleading.

Adaptive functioning refers to the effectiveness with which subjects meet the common needs of life and the degree of compliance with the standards of personal independence expected for their particular age group, socio-cultural background and environmental context. Adaptive functioning may be influenced by various factors, including education, motivation, personality characteristics, social and professional prospects, mental disorders and general medical conditions that may coexist with Mental Retardation. Adaptation problems are more likely to improve thanks to rehabilitation efforts than cognitive IQ, which tends to remain more stable.

b) predisposing factors

The causative factors may be primarily biological or primarily psycho-social, or a combination of both. After clinical observation, for approximately 30-40% of the subjects no clear etiology can be determined for the mental retardation despite intense efforts. The main predisposing factors include:

- inheritance (about 5%): these factors include inborn errors of metabolism primarily transmitted by autosomal recessive (Tay-Sachs¹), other anomalies of a single gene Mendelian transmission and variable expressivity (tuberous sclerosis²), and chromosomal abnormalities (Down's syndrome due to translocation, fragile X syndrome);
- early alterations of embryonic development (30%): these factors include chromosomal mutations (Down syndrome due to trisomy 21) or prenatal damage due to toxic substances (use of alcohol by the mother, infections);
- problems during pregnancy and the prenatal period (about 10%): these factors include fetal malnutrition, prematurity, hypoxia, viral infections or other infections and trauma;
- general medical conditions acquired in infancy or childhood (approximately 5%): these factors include infections, trauma and poisoning;
- environmental influences and other mental disorders (15-20%): these factors include the lack of care and social stimulation, verbal or other stimuli and severe mental disorders (Autistic Disorder).

¹ Cerebroside is a rare inherited genetic, due to a deficiency of hexosaminidase A.

² Is also known as Bourneville-Pringle syndrome and is a phakomatosis that is transmitted by an autosomal dominant.

c) Moderate Mental Retardation

This group constitutes about 10% of the individuals with mental retardation. Most people with this level of mental retardation acquire communication skills during early childhood. They benefit from professional training with moderate supervision and may provide for the care of their own person. They can also benefit from learning paths to social and work activities, but they are unlikely to progress beyond the second grade in academic subjects. They can learn to move independently in familiar places. During adolescence, their difficulties in recognizing social conventions may interfere with peer relationships. In adulthood, the majority fails to perform unskilled or semi-skilled activities, under supervision in a normally protected workplace. They adapt well to life in the community, usually in protected environments.

d) Severe Mental Retardation

The group with severe mental retardation constitutes 3-4% of individuals with mental retardation. During early childhood they acquire a minimum level of communicative language, or do not gain it at all. During the school years they can learn to speak and can be trained in basic activities of self-care. They derive a limited benefit from the teaching of pre-school materials, can be familiar with the alphabet and do simple arithmetic and can learn skills such as learning to recognize sight words for some basic needs. In adulthood, they may be able to perform simple tasks in highly secure environments. Most of them are well adapted to life in communities, in community housing or with their family, unless they have a disability that requires specialized care or is associated with other treatments.

e) Profound mental retardation

The group with profound mental retardation includes about 1-2% of individuals with mental retardation. Most people with this diagnosis have a diagnosed neurological condition that explains the mental retardation. During early childhood, they show significant impairment in motor skills. Optimal development can occur in a highly specialized environment with constant care and supervision, and a personalized relationship with the figure that takes care of them. Motor development and ability to self-care and communication can improve if given proper training. Some may carry out simple tasks in a controlled and protected environment.

g) Mental retardation severity unspecified

The diagnosis of Mental Retardation, Severity Unspecified, should be used when there is a strong reason to suspect Mental Retardation, but the subject can not be adequately assessed with standardized intelligence tests. This can happen with children, adolescents or adults who are too compromised or are too uncooperative to be tested, or, in childhood, when there is a clinical assessment of intellectual functioning, below the average and the available tests (the Bailey Scales of Infant Development, the Scale for the Cattell Infant Intelligence and others) do not provide values for IQ. In general, the lower the age, the harder it is to assess the presence of mental retardation.

3.1. The current context

In today's society the majority of intellectually disabled adults have not attended primary school in order to learn to read and write. Inside the Cottolengo of Turin in the past years, some literacy courses have been set up, which are also recognized by the Ministry. For people with mental retardation the problem has legal consequences as well, such as the inability to put a signature on practices of different types (bank, health, etc..) It does not help the autonomy of the person and its social participation. In fact, the inability to read and write creates numerous problems related to the daily life (read the bus number, the indication of a street light, etc.) and contributes to the isolation of the person. Often social workers tend to solve the problem of literacy putting under protection those people with disabilities who have such difficulties. In today's world, communication is fundamental to everyday life, we must use tools that enable the persons with mental retardation to interact with the surrounding world. Computers have had an incredible development over the recent years, mobile phones allows us to communicate with the world: the same resources have allowed many people with disability to get in touch with many people. From this point of view, technology has made great strides in enabling disabled people to interact with society. Starting from this principle, the idea was developed testing and then using the interactive whiteboard as an everyday activity, as a form of stimulation and communication for people who have a handicap of this kind. The interactive whiteboard can become a bridge between disability and society, an effective tool to communicate and express thoughts. Technology can help in this, certainly we must experiment to see what new ways can be traced for a better future for people with disabilities.

4. New technologies of communication.

Through technology, in this globalized society, events can have a huge resonance and can move thousands of people as recently happened in the Arab world. Through the use of computer systems thousands of people were involved and took to the streets to combat dictatorships that seemed etern-

al, for a more free society and the respect of human rights. Every day the human being comes into contact with the virtual world, through a PC, a mobile phone, a television; technology allows us to manage our daily actions and profession quickly and easily by typing on a computer keyboard. New and rapid forms of communication, such as the i-phone that uses the touch screen, emerged. In recent years, technology is making great strides, bringing to the market communication systems which were unthinkable only a few years ago. All this stems from the need to streamline communication in order to enter immediately into contact with the global world. The designers of these products understood the needs of people and their ability to communicate. Today the news travels around the world simply by clicking on the mouse and yet not too long ago we wrote letters by hand, knowing they would arrive only four or five days later.

"Technology" is a challenge for the educational world, as well. In this respect the problem of "knowledge-learning" arises, an issue that needs to be addressed with seriousness and determination because it represents a promise for new generations and for our future. Is it possible to use technology in education for learning and communication? Technology can help teachers and educators in the learning process or in the relationship with the world of intellectual disability? The person in the educational process, which is at the center of the path with his ability to understand life, must be taken by the hand and helped in the maturation process. A child who learns effectively at the school level, will benefit from it in the high school and even in his personal growth. When he will enter in the world of work, its growth will contribute to social welfare. A failure at school is a social failure, the person who does not meet his own goals and desires fails together with the community he belongs with. School failures have often led people to divert their course in life, ending in paths of deviation or juvenile delinquency: this is often the result of incorrectly structured educational courses and not responsibility of teachers which do not teach and educate the young people for life. Responsibility belongs to everyone and not just to the school. Task of the school is to prepare the young people for the future by teaching them the culture of the country they belong to and the duties and rights of every citizen. In this context, it is fundamental to reflect upon the new challenges that stem from technological world, remembering that technology is a tool to meet the human needs and not a goal in itself. Today we have more tools to communicate with those around us: in the case of the mysterious world of autism, for example, communication could be greatly facilitated through technology. Through the use of technology, researchers seek to meet the complexities of some disabilities and their diversity.

The radical and continuous changes of our time, are directly dependent on the new "technology", what indicates a need for change. In school new original perspectives should be introduced, in which ICT - Information and Communications Technologies - would not only be considered for their instrumental value - as commonly happens today - but as elements that can open up new and exciting educational perspectives; in the same way the provocations of the technological world, should be faced with enthusiasm by the professional community operating in the world of disabilities as done by the Outsider Association. Today, by opening the window on internet on our computer, we can be transported to any place on earth that we desire; such evolution has changed the dissemination of knowledge. The disabled persons could stimulate their own interest on a wide range of issues as well as their imagination; they could, at the same time, interact with the help of the operator and learn to read and write in a creative way. They would be confronted with an unknown world, what would stimulate an interest for further research and learning. This new way of learning is valid not only for the disabled persons, but, as well, for the whole group of participants to educational activity, which would be stimulated to reciprocity and cooperation. Previous European experiences shows that thanks to the use of ICT systems, students learn in a more enthusiastic and creative way.

These words by Professor Biondi, refers to the need of avoiding static training methodologies in school. The best teacher is the one who knows how to capture each time the attention of his pupils and their desire to research and to know. The same words should make us think about the problem of the uniformity of the school environment since it is structured according to the "traditional" method of "teaching" and it remains unchanged over the years. Its continuity is striking, despite the advent of new technologies has transformed our lives.

Outsider Association reflected upon this issue, trying to figure out if it made sense to further pursue traditional teaching or if the introduction of new technologies should be tested. The meeting with prof. Biondi was illuminating in the search for a new path of learning, especially where intellectually disabled adults with severe or profound mental retardation were concerned. In such cases, often traditional methods did not work and the teachers threw the sponge without trying to adapt their methodology, basing on their fundamental creativity and experiential training.

In the book of prof. Biondi, when it comes to school failure, he introduces the following quote from Piaget: "Students are actually quite able to grasp concepts that seem beyond

their comprehension, but provided a different way of getting there, because they do not understand what are the lessons that are given to them, not the matter.. " This is the challenge that comes from the technological world and a warning that teachers should not exclude non traditional forms of teaching. In the association Outsider is born the need to try a new experience for the intellectually disabled, who fail to learn in the framework of the classical method of teaching, allowing them to make progresses thanks to the use of the interactive whiteboard as a learning tool.

The author Paulo Freire, speaking of the educational system which is centered on a total "depository", which paralyzes the "communication" of individuals and excludes the personal dimension, proposed the method of "working together" through an authentic and liberating relational exchange. The interactive whiteboard would also give the opportunity to interact with the group that participates in the learning laboratory. This evolved into the concept that education is not only the personal intervention on the individual patient, but involves also the group that intervenes and helps the individual in his personal growth. The interactive whiteboard is addictive, unleashes the imagination and curiosity on the image you see, by stimulating the creativity of the individual and the group. Intellectually disabled person have a very limited time of concentration what can represent an important obstacle in a classic method of learning; on the other hand the interactive whiteboard provides continuous stimulation through the images appearing on the screen, which are constantly changing and attract the attention of the persons involved.

5. A new path of interactive learning for intellectually disabled

Starting from the above mentioned considerations, we will determine the possible stages of a process approach for intellectual disabled person in a laboratory with an interactive whiteboard IWB. Learning the alphabet or numbers seem a simple process, but it is not so obvious. Disabled people who suffer from intellectual and cognitive problems, often suffer as well from motor impairments, affecting their hand coordination and thus the possibility to write letters or numbers.

In the laboratory of literacy several attempts with intellectually disabled adults have been made. Some people have the problem of not being able to stay within the space of the paper to copy a single letter (limited space), while a blackboard space is definitely bigger. In this type of course after several weeks of attempts, the teacher, not receiving a

satisfactory answer, shall suspend the person from the laboratory. The use of an interactive whiteboard could give a different result, because through the use of images it could be possible to assess if the problem is connected with a learning difficulty or is it just a matter of teaching technique.

There are forms of intellectual disability that store content through an image which they lived. To mention one example: the theme of friendship has been developed with disabled people using mental images of people which are important to them. In order to discuss one specific theme with mentally disabled people, it is important to use images of their experience and their everyday life through a historical path. For example, a discussion about the value of the environment could start from the image of themselves, to reach the image of what surrounds them.

Conclusion

The goal of the project is to test a new teaching methodology based on the use of an interactive whiteboard, in order to assess whether better learning outcomes can be achieved. The traditional teaching method is important, but the use of modern technologies can be very effective in order to stimulate intellectually disabled learners and make them more receptive towards knowledge and skills which can be very useful for their lives. In the framework of its statutory purposes, the Association operates to ensure that disabled people are helped to break their isolation and to participate fully in the society by communicating and building relationships.

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