

# **A life spent on the integration of the disabled.**

## **On Thursday, in Lugano, Mr. Gabriele Scascighini will be granted the award of the Francesco Scazziga Foundation**

Page by  
Loris Fedele (Journalist at TSI)

On February 21, 2002, in Lugano, the Francesco Scazziga Foundation awarded a monetary prize to the Computer Science Centre for the disabled, of which the director is Mr. Gabriele Scascighini. The Centre is made up of a small group of people who act in favour of the autonomy and communication of disabled persons.

Every day, Mr. Gabriele Scascighini faces such problem by being the Inspector of the Special School in the Canton of Ticino.

### **Mr. Gabriele Scascighini, how does a technician tackle the communication-related problem with a disabled person?**

Communication is a bi-directional process. At school, such exchange takes place between the teacher and the pupil as several questions and answers take place, whereas in one's daily life a child communicates as soon as he or she autonomously starts saying something to other people. Concerning a disabled person, however, the matter is a bit more difficult.

As soon as one is faced with a child that does not communicate, the first thing to do is that of watching out for any spontaneous signals, which he or she might give. Therefore, any of such signals that one might perceive – and I would like to emphasize the word "spontaneous" as children can actually give a lot of uncontrolled signals – we take that as if that was the connecting cable between the subject and the environment. Often, the communication amongst people is very rich in nuances and it can occur by the movement of the eyes, looks, smiles, and any other gestures. Such communication, however, is indeed composite and difficult to reproduce. In order to use the computer, then, one simply needs to have a binary signal: that is a YES and a NO.

To help a disabled child that has communication-related problems, the technicians will take the YES as a 1 and the NO as a 0, or vice versa, and will send such information to the computer – which, in turn, understands the 1 and the 0 – and will thus develop that as a tree, going by the binary logic, all opportunities to communicate.

The psychological identity is brought about as soon as the child is in a position to say "no" besides being able to point out that he or she wants to differentiate himself or herself from other individuals by saying "who I am". On their side, the disabled also have such primary need and thus concretise that by voluntarily stating "yes" or "no".

The computer, then, can become very important if that is the only signal that the disabled can actually give. Then, if that is not the case, one should first use any low-technology supports that are as interesting and useful: for instance, paper tables, photographs, etc.

### **So what we have just mentioned belongs to the so-called Alternative Augmentative Communication?!**

The Alternative Augmentative Communication (CAA) first came about in the United States of America approximately 30 years ago in relation to the Vietnam War, as doctors found themselves before people that, following some traumas or injuries, could no longer speak. One therefore found out that, in such cases, the best treatment was that of using a pictographic code to communicate; in other words, one could communicate by using the images as there were no verbal possibilities in connection with writing. One can thus say that the CAA is a group of techniques and interventions that are used as the verbal communication is not there.

**Mr. Gabriele Scascighini, when did you think about associating the use of computers with such practice?**

Whenever one intends to solve the problem regarding a disabled child, one tries to mobilize all possible resources. Actually, I thought about the fact that technology could indeed be used for special schools many years ago. To me, it is a professional must to keep oneself updated on the technological progresses. If 15 years ago there were not many people who would think about that, nowadays, one is much more confident in such means. Ten years ago, one set up the Computer Science Centre for the Disabled (CID), which is funded by the Computer Science Foundation for the Promotion of the Disabled Persons (FIPPD). To me, then, the CID is a very important experience indeed: one continuously tries to develop computer science and electronic instruments in favour of the disabled individuals. One has actually brought about very highly developed projects, which do allow to improve the quality of life of the disabled, by thus having them be actively integrated in their surrounding world.

Being the Inspector of the Special School, I must often think about new communication programs. As a family brings us a child that needs to be educated, we, as a school, are assigned the duty to train him or her, so that the child can mature his or her own sound identity. Accordingly, as far as research is concerned, one still has a long way to go, although the children themselves as well as the teachers that go such way do provide us with very useful information to proceed. For the CID, that is a very precious bi-directional relationship.

**Whatever you develop, do you think that that might be used for other people as well besides the children for whom you create such program?**

A peculiarity of the CID is that of carrying out some "action in terms of ignorance", and by this I mean that as one tries to create a software, one tries to take into account programs, which one can very much mould. That is some sort of working line. The more the software is modifiable by the user, the more it will be able to be used by other people, as well. A program that is good for the computer must be able to adapt itself to various needs. Our softwares do request that our therapists dedicate themselves a lot to the work that they carry out in addition to working very hard. As they get started, such softwares do always show a black screen, and the real pedagogic-didactic contents (that is communication tables) do get put in by the teacher himself.

**Shall we give a concrete example?!**

Let's imagine that we have to place little cubes on the top of one another. All children that have regular motor activities do that. Such kind of playing is important for the development of the child. And it is for this reason that we have created the program called "Blocks in motion", by which any disabled child who works on the computer can virtually play with cubes. The child can then build up a little train using little cubes; he or she can put the wagons together in order to have a train and can thus make the latter move.

Such software can then add some value to the actual game; for example, liveliness comes along, which, with the virtual system, does enrich reality.

Please let me point out that whenever we are all around a table with the engineers that are in charge of the various projects, we always think about the disabled child that is well integrated with his schoolfellows besides being privileged by a software that is very much desired by others, as well – that is, the normally gifted. This has occurred with "Blocks in Motion" and is now happening with the more recent "Finger & Paint", which has just come out onto the market.



*On the left, in the picture, is Roberto Rusconi, who is a pupil at the Special School in Lugano-Besso besides being the leading character of the documentary entitled "Without any words", which was realized by Mr. Massimo Donati and Mr. Loris Fedele, our collaborator whom we asked to present in the GdP the engagement of the Computer Science Centre for the Disabled. "Without any words" was broadcasted by TSI during the last month of December. In the pictures below, on the left, is Mr. Gabriele Scascighini, who was awarded the prize.*



*The world of the alternative methods of communication for the disabled has reached out to a broad audience thanks to the TSI documentary entitled "Without any words"*

*In case there are no verbal opportunities in connection with writing, the alternative-augmentative communication relies on some pictographic code.*



## **The Finger & Paint program.**

**A multi-medial laboratory for children and young people that is also useful for the normally gifted.**

**The playbill in which one advertises the "Finger & Paint" program, one has written the following: "By the program that was created by the CID, children can have access to a black screen on which one can freely carry out any graphic animations. By some very easy tasks, one can actually create a document together with moving strokes of the brush, texts, vocal syntheses in various languages, short films, photographs, sounds, voices, and music that is separately or simultaneously animated".**



### **What else can we add?**

"Finger & Paint" is a multi-medial laboratory, some author-system for children and young people who want to carry out some projects and thus create a document. The black screen that comes up at first to whomever wants to operate the computer is an important message indeed. In other words, that means that that is the point in which the duty of the designers ends, and that of the child or the adult that is in charge of him or her begins. One wants children to be the authors of their own multi-mediality. We want the child to get hold of those types of language, which, in our historical moment, have indeed become important. The passive use of TV and videogames can actually be dangerous. Certainly, beyond a "Finger & Paint" program, one can see what our ideological and constructivist background is: we want to have a software that puts the child in the foreground, thus allowing children to cooperate with one another. Only like so shall the pedagogic trend be positive and interesting. We have now tested the "Finger & Paint" in primary and secondary schools, and we saw that all children did cooperate with a lot of imagination and creativity. Each one of them was indeed an actor.

### **One of your most sophisticated products is called "Adioscan", what is that?**

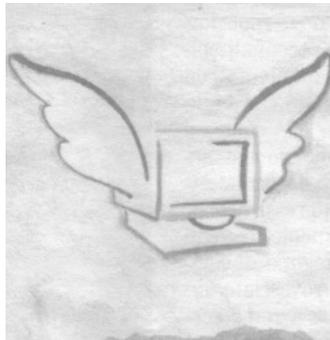
Adioscan is a program that allows teachers and therapists to build up CAA electronic and computer science-related systems. Adioscan has got some peculiarity that is unique in the whole world, and that is that of being able to pilot external sensors. To illustrate, that is the only program that allows a tetraplegic child to play with a real electric train. The child can have it start and stop or can turn on a light bulb. He or she can play with the crane and can make soap bubbles. Why did we do that? Because playing is the constituent element of maturity as well as that of the affective and intellectual growth of each child. Therefore, the disabled also have to have access to that. To us, communicating and acting in relation to objects have always been elements that are fundamental for any educational intervention. **(I. f.)**

## **The use of the computer**

**Technology is important; however, the person's engagement remains decisive**

**Let's leave playing aside for a little while and move on to the learning of something that is perhaps not so amusing, that is mathematics. In case a disabled child has to calculate, he or she can have serious problems. And if the child is tetraplegic, that can even be insurmountable. I know that you have also taken that into account!**

The program is called "Access to Mat" and it allows to carry out part of the arithmetical activities that one usually sees in the primary school. Let's suppose one has a very easy problem to be solved: at school, we have learned how to add by getting the addenda into columns. Now, the fact that one has to put them into columns correctly is fundamental in order not to make any mistakes. If the child is tetraplegic, he or she is not in a position to use any squared notebooks. "Access to Mat", then, places numbers automatically into columns on the screen of the computer, thus allowing the operations to be carried out. Units, tens, remainders, amounts to be carried... It is also used by those children that have light motor disabilities and are thus in a position to use the mouse. So how does one write a number? One uses a keyboard. Any child that has motor difficulties can actually write, for example, number 2002, by relying on small electronic keyboards that come out on the screen besides pointing out to the child, in a scansion-related way, a figure after the other: how many thousands? How many hundreds? How many tens? How many units? Children will then pick whichever numbers they want one by one and will also determine how to place them correctly. That is perhaps some long and difficult way; however, it allows to reach the objective. Accordingly, one needs to emphasize that as a child grows up, there is no knowledge whatsoever that can not be acquired without really working hard! And as it is the case for the disabled, the engagement that one needs to have in order to succeed is indeed great! Our computer science systems will then allow him or her to express himself or herself by numerous strategies even if they ask one for a lot of undertaking and hard work.



**In any of your products, does the vocal synthesis also play any role?!**

The vocal synthesis simply puts any text into some voice. The computer, then, reads out the sentences and says them with its own voice. Indeed, it can actually play some important role. At the CID, one uses some excellent Italian products. The technological knowledge is indeed very much widespread, and an additional support can actually be very useful for a person that cannot communicate verbally or for the blind.

**Can one then state that the instruments on which one focuses at the CID are products that are in the van?**

Certainly, they are very modern. However, I do not think that one can extol the technology. I would rather believe that it is very fundamental to be very much set on a pedagogic and educational project for a child and thus rely on any possible means.

Technology is simply an aspect of the intervention that has to be available at school for disabled children. **(I. f.)**