"Work in Progress" – Designing Dis(Ease)Ability with Apps Aiming at Communicative Autonomy with People with Disabilities

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Abstract

Contemporary society is characterized by multiple fault lines that mark distances and differences between social groups; health conditions and impairments in body functions and structures are among the main causes of inequality, discrimination and stigmatization often seriously damaging the dignity of a person.

Successful participation in the learning process and achieving relationships with peers actually becomes an indispensable condition to avoid being discriminated. Our project aims at contrasting such erroneous behavior in the presence of disadvantaged persons; in particular, our theory - the Dis(ease)skills - is being modernized in its applicability through the use of Access so as to facilitate the process of functional autonomy to communicational 'Learning/with people with disabilities. Our intention is to fully understand what these new tools allow if applied, so Solutia, the needs of autonomy of people with permanent or temporary, since it is the psychological barriers to those who now seem more insurmountable than technological.

In everyday school situations emerge simultaneously issues related to learning disabilities, and inclusion and integration of counter reels you in finding the solution paths of mediation between teachers' knowledge and skills of these past students.

This project is a natural evolution of "The Enchanted Maze" presented last year, as a tool for development and integration of students with disabilities,
made with a network of schools, it is the trial of an educational project oriented strongly adoption of the "App", more modular computing for teaching and use of advanced software platforms, to facilitate the integration of pupils with intellectual disabilities, where different, the use of the new frontiers now essential communication technology environments allows learning truly innovative, reformulating these paradigms are the basis of educational processes: from the traditional one which proposed the transfer of knowledge from teacher to learner, which is functionalized to contemporary constructivists on the mechanisms of knowledge.

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The state of the art

The companies 'contemporary' characterized by multiple fault lines that mark distances and differences between social groups, health conditions and impairments in body functions and structures are one of the main reasons of inequality and discrimination, which are often associated with forms of "stigma" gravely injurious to the dignity of the human person. The contribution that new technologies are engaged in this field, has overcome many limitations and encourages the expression of "if " in many dimensions, where the infinite panoply they offer, but finally begins, even slowly, to pay the look to the field of inter-functional communication also learning. The need 'to reflect the current world of knowledge and dissemination of knowledge makes it necessary to reform the mode of transmission, conveying and sharing of knowledge through a new analytical application of our way of knowing, thinking and above all teach. The importance to fully understand what the possible technological applications, especially when used in the field plete information needs of people with limited autonomy and 'was the inspiration of our operational work that led to the pragmatic implementation of our theory, making so extraordinary implications for us, yet completely unpredictable. To claim that its applicability, from our point of view, could undermine what has been theorized and realized up to now, for and on behalf of the use of new technologies, and 'to say the least restrictive, because' we wanted to shake the foundations of what was stated by theorists and empiricists. Aware that the real difficulty at school level is not 'learning if', but the approach to different interpretive reading of it, we have promoted the application of mediation and objectivity termination of which they are carriers in the daily dynamics of communication, modifying in advance the concept of transmission of the school: anyone can learn if put in a position to communicate in a personal way and decode their codes of interpretation of messages. Therefore, understanding how each individual inside labeled "disabled" from "normal", regardless of gravity of the diseases that afflict them, are hidden from the great potential of ideas and solutions for the social life of everyone,' was the preeminent value we have chosen to deepen and transmit.

Our theory: The Dis(ease)ability

In everyday reality school problems emerge simultaneously with difficulty learning, inclusion and integration, while in contrast, is floundering in seeking the solution paths of mediation between teachers' knowledge and skills of experts in the field, almost always seen as the only real resources. In this field, so closely the education and training, and 'need to meet the challenges that learning difficulties and mental disability generally reveal, in fact, convinced advocates that "educating through what is said, more by what and you, ""disables it" does 'puts in place the need' to develop a shared reflection on the issues and awareness of it according to a reinterpretation Holistic point to
different ways and styles of learning as a resource for the clinical pathology, which determines in some way a further touch of diversity, should be the guideline to be observed and kept as a reference point to calibrate and adjust the method and teaching, to encourage the process of teaching and learning. The idea is 'simple: instead of restricting the scope of autonomy of the person performing skills' diversified, partly because of clinical status and/or pathological as it still happens, do you think this is part of the scope of that person. Indeed, though the appearance of disability involves both the subject and its surrounding world, the construction of technological devices, solving in the field of personal autonomy, trigger universes of relationships, feelings, hopes, impressions, and perceptions different solitudes, since the device has the strong power to overshadow the impairment bringing the subject in the world. The disregard of this or do not observe this basic rule, confuses the inability to approach every day in practice and also teaching, trivializing the clinical diagnosis as a barrier to the social and individual closing in common stereotype of disability sense of "dis(ease)ability". In fact, the term we coined the "Dis(ease)ability", you redefine who are the real obstacles that children, students and disabled people generally live and/or encounter, not so much different approach to the skilled with the surrounding reality, that "use" the newspaper in a different way, because the anxieties, fears and inability to approach that they trigger in those around them, highlighting the one hand the difficulties related to the deficit, and the other the attitudes of fear and ambivalence of the environment that interact with the potential degree of autonomy reached, despite the disadvantage. This term we focus on a clearer focus on the observation of the difficulties of the subject with different characteristics habilitation, to "see" the problem and possible solutions to more autonomy in their entirety, in order to face the best, creating a space, or virtual, where experience and professionalism can find the right expression in the respect of roles and responsibilities. The strong point of reference in the review of this new term - "Dis(ease)ability" in fact - and' to act on false interpretations of behavior of those who, despite himself, approaches the relationship with human realities habilitation different conditions, in fact, a disabled person, the seriousness' of his diagnosis deficient, retarded more or less serious, should not preclude respect and the development potential of his residual functional part to correct a normal life: in other words, because of its deficit, mental physical or both, should not be singled out as "one who is not 'able to understand or live" according to common standards of normalcy. The positive implication of this term and 'given by the "synergy" that is, the optimal integration of several elements intended to achieve a common goal, to obtain an overall more satisfactory than that which would obtain separately: open the "Dis(ease)ability" technologies, designed as a resource for everyone including cultural differences and/or social, must be understood as an element of wealth in human ethics and reconsider another approach. Our starting point and inspiration 'was not so much to consider that people with disabilities and/or otherwise disadvantaged people can learn different habilitation like everyone else, that's obvious, because the knowledge that lacks culture and preparation
by all learning "disabled" and the diversity of culture, of thought and approach that they are real bearers, reviewing the individual to re-learn it in its broadest and inherent non-specificity and singularity. Thus we have reinterpreted the relationship that the school environment must have with the world of media and communication, in order to use in a new and creative technologies mass media, to promote efficient and effective learning of knowledge, encouraging the mastery of approaches innovative in relation to monitoring and evaluation of impact of training, promoting specific skills in the areas of labor discipline; and not 'treated to teach the use of media, the new generations do not need them, let alone people with difficulties that are the first to appreciate and current users, how to understand and capture their experiences and how our educational project could become the new teaching. The Media Education, so we reinterpreted as new educational and technological reality, a true resource in the teaching process of the traditional type, has allowed us to create models and styles of teaching/learning is not only innovative, but based on processes collaborative communication and bi-directional, as they have been outlined in recent years with distance education. These concepts were reiterated in the interview broadcast that Dr. Conversano issued within the program "Different From Whom?" Aired on Rai Radio 1 on 20/11/2010, whose podcast can be listened to link published in the collection of websites.

**Our doubts: promoting autonomy or complicate the reality?**

"According to some authoritative texts of technical aeronautics, the bumblebee can not 'fly because of the shape and weight of their bodies, in relation to the wing surface. But the bumblebee does not know and therefore' continues to flow." (I. Sikorsky) E 'in their discussion of these lines of Igor Sikorsky the key to the application of dis(ease)ability, ie the importance of belief that has guided our steps, the logic levels where we where mossi: identity, capacity, behaviors and environments, inverted with respect to limiting beliefs, reversing the route allowed us to achieve common goals for all, with full consideration of success. The pervasive presence of disability 'or rather, the concrete contexts of "dis(ease)ability" in everyday life 'social, poses problems in individuals of various sizes: the goal' was to design, according to a re-reading application in key functional and convey technologies, in order to facilitate access to social communication acquiring, by themselves, the ideas for making the most personal way possible and able to "approve" our normal way of life to them. The reading, therefore, and 'and should be different: it is not necessary to compensate for what the disability' is missing in the individual, as this would increase his gap of psychological distress to others, but we wanted to reinforce what the disability 'has spared that remodel supporting it properly, that phase between what the individual as a whole was able to do or might have done and what still might be able to achieve, despite the disabling situation, with tutorial support technologies; move that the attention of those solutions is commonly the everyday crowd, from what the
individual and 'can do alone (area of individual competence) to what could be done if supported by any help, so even technological - where we have technology which is essentially designed for the field of electronics or computer, but he could change any element in an optimum manner the state of passivity 'and dependence on the state of maximum independence and wellness - (area of proximal development) not only, but not lies entirely in the area of jurisdiction, and as 'useless and teach what the person' already capable of doing, risked discouraging or devaluing self generate ideas which, when compared to the context of the deficit, the functions are potentially recoverable habilitation or, for compensation, allow the strengthening of the healthy part of it. Traced on this contextuality of action analytical and functionalized in the field of communication, we amplified enormously the interpretation of values of dis(ease)ability: were not the "disabled" that had to communicate with us in a unique and standardized but we play with the different modes that the various types of clinical and pathological disabling put in place, tell us what they wanted and/or communicate even if you continue to functionalize any approach trivially, creating ongoing conflicts, depression, anxieties and frustrations with closures and escapes by the so-called "sick" and defeated by so-called "normal", when in fact, a re-reading reverse would simplify everything. Created primarily from our need 'you want to implement procedures and instrumental planning for specific needs, and sometimes little known, the application of our theory - the dis(ease)ability - becomes solving dynamics approach with the differences not only in general, but detaching in fact empiricist lines of "psycho-technology" theorized by de Kerckhove aims, through pragmatic approaches instrumentally, to make concrete and operational vygotsckijana the theory of the "zone of proximal development". In fact, interacting on the connection between language and mental organization, in its application being able to edit and/or speak at a deep level of an individual's psyche, we have acted strategically in the solution needs not always met, because they are based exclusively on complex operation, thanks to the integrated skills of clinical, educational and technological. Conceived in its universal approach, this theory is well connected to life not only the disabled but its plural facets - see for example the stranger with the difficulty of understanding the linguistic codes of communication, if it encounters a context that does not support the idea and recognition of these codes, a condition of living large " dis(ease)ability", contributing to a further state of estrangement, exploitability' and at social distance - the same goes for those who have suffered disabling injuries that lead them to be excluded so temporarily or permanently from the context it belongs. Our goal 'was to act on those structurally critical factors that normally affect the efficient approach to integrating, implementing solving assumptions for technological assistance to foster communication, experience it and create new bases for its transferability to all operational contexts of everyday social life, moreover, its focus is part of the heuristics where, if the task of research and 'to promote access to new developments empiricist, and' right in the heuristic process that fits the ideal place to realize it because the state relies on intuition and temporary
circumstances, in order to generate new knowledge as a method of approach to problem solving. In fact, the dis(ease)ability theory indicates, as this heuristic, the streets and possible strategies to be activated to make progressive, developmental and applied the intercommunication' with disabilities' or approaches to life contexts, where, if the results envisaged various theories from leaving standardized, with its application evolves according to the result reached in the moment of its adherence to the context, where 'the case that redefines the new structure of the theory itself and nothing else.

**Our facts: testing and the project**

This project is a natural evolution of the project "The enchanted maze" presented last year at the 9th Annual International Conference on Communication and Mass Media, and the project "The Virtual Media as a tool for the development and the integration of pupils with disabilities", realized with a network of schools in Taranto, and referred to 50 students with intellectual disabilities, but also to students with specific disorders and learning disabilities (ASD, dyslexia, dysgraphia, dyscalculia), often due to a maturational delay, with a low investment and low motivational experiential background. It is, in essence, a trial of an educational project strongly oriented to the adoption of specific technologies for teaching and the use of technologically advanced software platforms for the integration of children with various intellectual disabilities.

The knowledge that different and innovative ways in the activity of support can facilitate training and educational opportunities enabling chances of focused and accessible recovery, led the authors of the initiative to design an educational system and technology intended to pursue the specific objectives listed below:

- Finding solutions and innovative development of new technologies applied to teaching Information and Communication;
- Support for pupils with temporary or permanent disability by making accessibility and usability of information compliant with W3C standards
- Development of autonomy in learning and experiential and motivational involvement of the disabled person.

The logics followed by the project was to develop a tool to foster the development of autonomy in learning of students with disabilities, who in addition to learning problems, have difficulties in the application of knowledge and in carrying out tasks or using instruments that are not able to act on their own. The project aims at strengthening the capacity of abstraction and logical thinking, reinforcing basic skills and operational real capabilities of the recipients, through the use of innovative technology on the one hand, but very familiar to current generations on the other hand thus allowing the decrease of
the difficulties the disabled pupil and so reducing the gap with the class group. In these students, in fact, a low level of self-esteem and psycho-emotional and behavioral immaturity is often present and for this reason, while carrying out any educational activity, they are usually restrained by fear of failure and/or do not do this, researching, therefore, guidance of the teacher constantly breaking away from the reality of the class group. As argued by the engineer Mr. Manzulli in his radio interview released within the program "Service Area" of October 2nd, 2011 aired on Rai Radio 1 in Italy, the podcast of which you can listen to on the link provided in the site links, each disabled person is "foreigner" in the entire world because he often lives his isolation also among his own countrymen. Therefore, the issues addressed in this article are aimed at both Italian and foreign people with disabilities, sharing this educational intervention. The design concept, therefore, is based on the premise of making the contents, often difficult to understand and redress when using traditional approaches to teaching, more easily assimilated by the disabled population, focusing on involving ways and situations and usual provided by the use of technologies now become ordinary although innovative in the student population. Moreover, understanding the didactic message, when not referred to the experiential background in all disabling conditions, is strongly affected by attentional lability, and so the student needs constant reminders to focus attention: the use of a technology which is rather "familiar" and common to his peers, reduces the gap between the disabled and the world around him, eliminating isolation and encouraging his integration.

It should be noted, furthermore, that such students, have low-performance in tasks of working memory, so it is important to provide a tool that gives the opportunity of self-control results, and therefore the possibility of error correction in real time, helping them to reflect upon their work as a consequence of the immediacy with which feedback, be it positive or negative, is presented. In this way, therefore, being able to independently manipulate and transform information, this tool would help the user to act more independently, actively and constructively.

From the point of view of technological innovation, the objective is to promote learning through the use of mode of communication adopted by the latest models of mobile phones such as smartphones, because this instrument, when used in communication activities and educational applications, allows the creation of a learning environment whose characteristics are the immediacy of understanding, ease of use and the adoption of mechanisms involving the motivational point of view. In fact, this generation of students already use the Internet and the new frontiers of communication, as a natural space for learning and play, so much so that they have been called "digital natives" [Marc Prensky, Digital Game-Based Learning, 2001] since they are growing inside an already digital world.

The involvement of the disabled student in the use of such tools would give him, on the one hand, the ability to break down the "digital divide" often due to the not always practical use of technology, in order to overcome said "digital divide" (isolation technology ) of which he is often the victim and, secondly, to
overcome personal isolation, applying language and modern tools close to the current way of communicating in everyday life.

The now-essential use of new communication technologies can therefore be truly innovative learning environments by rethinking the paradigms that underlie the educational process: if the traditional paradigm was based on the transfer of knowledge from teacher to learner, in the new reading it relies on the mechanisms of constructivist knowledge.

In fact, the “virtual” learning environment promotes new learning systems based on relativistic models of knowledge where, through cooperation and communication based on the use of images, sounds and electronic messaging, students find creative ways to improve their knowledge, using the community as a meeting place for the production, distribution and management of knowledge but also as a space for socializing (social learning) and virtual dimension of confrontation and dialogue.

The first experience made with the introduction of mobile phone use at school was conducted in a multiethnic class of variable composition that witnessed the presence of several students with disabilities.

After conducting a technical investigation of cell phone types and how they had worked their calendar a "slang" common to all was created. In a very simple and natural way, we realized that students had become more independent (typing is easier than writing) and did not lose any opportunity to engage in this new teaching methodology in order to use their phone. Moreover, in a subsequent theatrical experience in school, students texted the various adjustments to the beats of the script, procured by the bluetooth various mp3 sound files and created the backstage photos by participating actively in the creation of the show.

Translated into educational terms, this teaching method provides, in addition to a particular attention to the relational and affective aspect (with the activation of mechanisms to facilitate group dynamics), also the exposure of the various subjects and planned routes in a form simplified to facilitate both learning that the conquest of autonomy.

Teachers can now choose the contents and setting of minimum targets, with specific interventions coordinated not only by the support teacher, but also using the various methodologies to be used mainly to tutoring, teaching multimedia, orientative and interactive tasks of multidisciplinary nature, they may realize special orientation activities for children with disabilities.

It is in this context that the mission of the new school can be achieved: to direct its pedagogical activity as educational action. In reference to current research project, after the success of the use of the techniques mentioned above, our attention has been focused on some limitations that current technology of smartphone shows when users are disabled.

For example, for visually impaired users the graphic richness of a smartphone can be a daunting exercise because the display appears to be small compared to that of a computer, similarly, those who suffer from impaired mobility of the limbs can not use their hands properly, so they correctly use the
property of a capacitive screen smartphone (sensitivity to small current of fingertips).

In the face of these obvious difficulties, the project idea initially saw the realization of a software platform that, through a specialized GUI (Graphhic User Interface), could reconstruct on a computer or a tablet PC, the exact reproduction of a smartphone and its unique operating characteristics. Thus, using the tools currently available as accessories for the PC made for disabilities (for each type of disability there is a specific aid, a tool able to facilitate the movement or improve the vision of the screen), everyone can use functions such as surfing with the touch mouse while on the screen everything is exactly as in the phone screen: all functions, including the telephone can be switched from the PC, through an appropriate interface with SIM cards.

The interface with the computer isn’t an amazing thing. There are many programs that now allow to drive the most common mobile phones with your computer, even Mac OS X lets you write SMS messages directly from the keyboard with many Bluetooth phones, but for a disabled person, the simplicity and flexibility of a smartphone interface directly on the computer would be able to use their mobile phones with display and control systems already they used routinely, without suffering the limitations of the available solutions today.

Moreover, the evolution of the project, with the advent of the Tablet PC, consisted of thinking about an Application that would allow disabled children to improve communication with others and with their teacher using the screen of 'I-Pad and its touch screen functionality. The interface to the touch, and devices like the iPad have been created for the intuitive ability of a user of 2 years of age. In essence, the Application uses a kind of "slang" of images that helps the disabled to express themselves through some buttons, making the device a real communication tool, allowing them to interact with the class environment. The project includes an enforcement phase of testing in a properly equipped classroom, but soon the application will be available on all stores. The application has been made with the development environment Xcode 4.2 for Leopard and Lion operating systems, using the Software Development Kit available from Apple on devices with IOS5 (I-Pad, I-Phone and Mac).

Conclusions

Special education does not walk on roads other than the "normal" ones, and the study of disability and that of the person, even if they belong to different areas of knowledge and action, require professionally valid additions within those, but by choice or need ', should deal with concrete by giving precedence to appropriate action in relation to the emerging needs of individuals in their existential dimension, pedagogical-didactic and clinical education.

Finding the best solutions to help build these skills is a challenging and difficult task, which raises many questions and problems to be addressed
because each student has specific characteristics and difficulties that make him/her unique and different from others, so the best teacher is the one who is able to cut his or her work around the specific characteristics of each, where such action can not be exhausted in sterile technological performance.

Innovation is not just about manage to have good insights but new ideas to improve the old to understand and anticipate even if the path and 'still all uphill, complicated, full of disappointments, true and false hopes that we, with perseverance, we have decided to dedicate, daily supported by the words that still vibrate to the graduates of the late Steve Jobs at Stanford University in 2005: "... If you can not find what suits you, keep looking, do not stop ...", made for our provide better quality of life for our less fortunate friends, but this ... 's another story, or, to use McLuhan's aphorism: "... If you do not like our idea .... no matter .... We have in many other ...

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RAI RADIO 1 : “Diversi da chi?” – Interview Raffaella Conversano

www.radio.rai.it/radio1/diversidachi/view.cfm?Q_EV_ID=321903

HANDIMATICA 2010 – Migrants and disabled Seminar: Technology mediation and mediators

http://www.youtube.com/watch?v=DCU0A74cwfo