

## **INCLUSION, DIGITAL AND BODY BETWEEN REALITY AND ARTIFICIAL INTELLIGENCE. AN HYPOTHESIS**

### **INCLUSIONE, DIGITAL E CORPO TRA REALTÀ E INTELLIGENZA ARTIFICIALE. UN'IPOTESI**

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#### **Abstract**

In this paper the authors try to focus on the link between inclusion, digital and Artificial Intelligence, analyzing the sense of the body between real and virtual learning. It is necessary to consider a new aspect of the educational process in the contemporary school: digital inclusive school between the real and virtual learning of the individual with disabilities who takes advantage of the experiences of Artificial Intelligence as a new frontier of full inclusion.

#### **Keywords**

Inclusive School, Body between Real and Virtual, Artificial Intelligence

#### **Introduction**

One of the fundamental aspect of the contemporary educational research is the theme of the inclusive school in relation to the disability and the role of digital didactics. In the context of the Italian scientific literature, the issue of the inclusive school has been dealt by scholars of disability pedagogy. This is a complex theme that always requires a deep analysis, new experiments and above all a new scientific organization which helps to understand this phenomenon.

In this paper we will try to develop a research hypothesis that is a prelude to a broader experimental work aimed at clarifying the issue of the inclusion of male and female students especially during this Pandemic period: a new dimension of the educational process of the sense of the body of students with disabilities between the real and virtual learning. After having analyzed the central themes of the inclusive school we will try to analyze the question of this new educational dimension.

We will conclude proposing a hypothesis of educational experimentation precisely on the possibilities of including the students with disabilities helped by some Artificial Intelligence's tools.

## **1. The problems of the inclusive school.**

The model of the inclusive school, which is spread very much in Europe, is represented by the idea of a "school for every student". This could mean that an inclusive school model could ensure that every student would develop his/her embedded powers.

This determines that in the class of the school of autonomy a differentiation of learning does not determine a hierarchy of talents. A solution of an inclusive school model would determine that everyone's talent should be strengthened through the diversity of learning (D'Alonzo & Monauni, 2021).

Inclusion is a difficult school model that should preserve equity and merit, as some sociological studies have recently highlighted (Benadusi & Giancola, 2020).

Furthermore, the inclusive school should determine the merit and not limit, as some authors affirm (Mastrocola & Ricolfi, 2021). The terms of the matter need to be adequately clarified.

It is evident that the inclusive school develops some aspects of the democratic school. The democratic school model, which can be referred to John Dewey's school-laboratory, was fundamentally based on two central principles: the school had to influence social progress and, secondly, the student must be at the center of the educational relationship, and develop constructive learning (Spadafora, 2015).

The democratic school was based on the principle of giving equal opportunities to all, but this principle has been changed by the great transformations of the scientific research of the last century, from the discovery of the helical structure of DNA to recent researches of the neuroscience (Rizzolatti, 2005; Damasio, 2018).

What emerged very clearly from this cultural transformation is the adaptation of education to specific needs of every student, obviously including the category of the SEN (Special Educational Needs) with particular reference to disability.

But inclusive school presents unsolved questions, that could constitute a significant reason of reflection to the school's future.

First of all, the critics to this model affirm that this system of inclusion determines a lower cultural quality in respect to the high standards of international assessment. Probably an inclusive school needs inclusive teaching. This means that the teaching must take into account a constant dialectic between individualization and personalization and, at the same time, tries to enhance the contribution of digital teaching in an exemplary way.

There is a second open question, which better clarifies the theme of the school inclusion of the students according to Italian laws Dlgs 66/2017 corrected by Dlgs 96/2019. This model has been also extended to the International context, as it has been demonstrated by the 2006 UN Convention of the rights of the people of disabilities ratified by Italian state law in 2009

The inclusive school model therefore presents some problems which must be faced by the contemporary educational research. This school model must clarify, first of all, how it is possible to ensure the learning quality from the persons with disabilities. Is it possible to plan the inclusion of the students with disabilities through the ICF? And, according to this perspective, how should an educational agreement be constructed between the specialized teacher for disabilities, the curriculum teachers, the head master and the families? To try to define a hypothesis for subsequent experiments, it is appropriate to analyze a specific aspect of inclusion: the sense of the body between the real and the virtual learning of the person with disabilities.

## **2. Learning and disability between real and virtual**

A fundamental aspect to achieve inclusive teaching is the training of teachers. The training of the teachers derives from a long cultural debate which was developed during the first decade of the 21st century, but its effect was in a certain sense not significantly developed (Cambi & Giosi & Mariani, 2017) .

However, this training process continues to be epistemologically the end and the means to build inclusive teaching. As it has already been highlighted (Spadafora, 2018), the educational process of the teacher or of the student is the expression of a "family of processes" that develops and differs according to the specificity of the individual.

The educational process, in fact, is determined by different phases and moments that represent the educational aspects of each individual in their singularity and unrepeatability. There is an "inner life" which establishes the instinctual and motivational frame of each individual and which inevitably determines the various dimensions of human intentionality. It is quite evident that in every educational process there is a complex circuit between the unconscious area and the specific motivation and intentionality of the mental process.

Beyond the different psychological and psychoanalytic theories, there is no doubt that human potential in a complex way links the unconscious to the conscious aspect of human behaviour.

It has been evidenced how human intentionality, mainly linked to the representation of psychological phenomenology of Biswanger (Fadda, 2002), sees the difficulty of the "flourishing" of the educational process which in some cases becomes a "fatigue of being oneself", which often leads to depression in relation to the rules of social coexistence (Ehrenberg, 2010).

The educational process links intentionality to the event (Fabiano, 2016). There is a slow and progressive, metabolic transformation of human life, through the various stages of growth, cultivation and care, alternating moments of intense motivation with others of dependence and isolation.

The question of the event, which has a philosophical (Heidegger) and psychoanalytic (Biswanger) matrix, expresses a central dimension which is not adequately dealt and analyzed in a perspective of epistemological and psychoanalytic theory (Mortari, 2021). For this reason it is essential to analyze the problem of the body in the dimensions of the inclusive school. First of all, the theme of the body is central not only as a "biopolitical" experience (Foucault, 2015), but as an educational experience.

Precisely for this reason the theme of the body has been connected to the well-being and the physical education in school (Casolo & Vago, 2019). The problem is very complex in relation to the epistemological questions of the body which are declined in the issues of the motor sciences (Molisso & Tafuri, 2020).

The sense of the body determines a deep reflection in relation to the problems of the inclusive digital school. In particular, the body of an individual with disabilities who lives in the school in different age groups must be analyzed in relation to the self-perception of his/her identity. It is quite evident that the self-perception of the body represents a fundamental moment to grasp the educational transition from intentionality to the event.

The learning of an individual with disabilities is an expression of the difficulty of self-identity and relationship with others, but it is a moment in which learning reveals the inner potential that allows a possible inclusive dimension in the classroom.

The ulterior problem to understand the complexity of the educational process is the relationship between the body, real and virtual learning.

There is a vast scientific literature which analyzes the relationship between learning and the virtuality in the Web Society (De Kerchove, 2019). The issues during our world social networks now is conditioned by the Pandemic with the recent project of the Facebook Metaverse paradigm.

The predominant approach to the learning in relation to the virtual is very well known, as was also represented by the film Matrix. Learning in the virtual dimensions, is determined by a different relationship with the categories of space, time and memory (Lévy, 1995). The dimension of space-time and memory determines a learning process that must be appropriately studied.

But what happens when learning is exercised by an individual with disabilities in the specific interaction between real and virtual? What is evident in this complex relationship is the reaffirming of the centrality of body beyond the virtual dimension of the learning.

The individual with disabilities from kindergarden to high school, determines a new way of learning between the body, the real and the virtual.

In fact, what must be highlighted in the context of an inclusive digital teaching, also by the different aspects of AI, is the possibility that an individual with disabilities can develop his/her potentialities.

Inclusive digital education, based also on AI, must promote a technology of culture that represents an "environment rich in technological tools and artifacts" (Hickman, 2001) to better understand the learning of every individual.

### **3. Inclusive digital education, based on AI, between body, real and virtual.**

Studies on digital education in the last two decades have characterized the advent of a new didactic paradigm that helped the inclusivity of the disabled individuals.

Digital teaching (Ferri & Moriggi, 2018; Rivoltella & Rossi, 2019; Sibilio, 2020) is based on digital competence that the recent Italian law on civic education considers a fundamental (De Luca, 2020).

It is evident that digital school promotes the specific didactic activity of the teacher and the collegial didactic processes in the school (Rivoltella, 2021). In other words, digital school is an indispensable element to build the inclusive teaching. Digital teaching promotes the role of an inclusive teacher and, also, of an inclusive headmaster and "inclusive parents", who must become a shared heritage of the school of autonomy. The real problem is the training of an inclusive teacher who combines disciplinary skills, educational sciences and his professional creativity (Fabiano, 2020). In this perspective the specialized support teacher could be a significant coach of inclusion processes. An aspect of this inclusive school model is to define an inclusive teacher for the individual with disabilities. Within this complex process which has a reference in the ICF, is fundamental the inclusion of an individual with disabilities through the perception of the body between the real and virtual.

The epistemological principle that supports this hypothesis is that an individual with disabilities can have a psychological crisis comparing his perception of the body with the learning of the Web society. To realize this hypothesis, are required many empirical and experimental researches.

In fact, keeping in consideration the different types of disabilities (Ianes & Augello, 2019), the inclusive education must be compared with a careful recognition of the dialectic between individualization and personalization.

The the body between real and virtual learning in an individual with disabilities can constitute an added value that can promote a better understanding of the inclusive school.

Without a radical reflection on the importance of the perception of the body in the individual with disabilities, it is very difficult to help these students to understand their identity especially into this virtual frame in which we live.

The inclusive digital education, therefore, is certainly decisive to better understand the meaning of learning of an individual with disabilities between the real and virtual learning in particular with new frontier of Artificial Intelligence.

In fact, AI increases the processes of facilitating learning and, can promote a better adapted motor education (Tafari et alii.). In other words AI can better orient the individual with disabilities to plan their own life choices.

#### **4. Provisional conclusions. A hypothesis.**

In an ever-changing world, it is necessary that the policies related to the school are able to orient female students, allowing them to face the new challenges in the best possible way, under the supervision of the school considered an "educating community"(Rivoltella, 2020).

The changes of society to evolve require a new educational approach. Although technology has always exerted its influence, the interaction between the new frontiers of Artificial Intelligence (AI) still appears particularly complex to interpret the issue of digital school inclusion.

It is fundamental to invest in the development of transversal digital skills to build a new epistemological model of inclusion.

The Future of Education and Skills: Education 2030 - OECD (2018) document affirm: "There is a growing demand for schools to prepare students for the fastest economic and social changes, for jobs that have not yet been created, for technologies that have not yet been invented and to solve social problems that did not exist in the past".

On the one hand, therefore, students will increasingly need to acquire digital skills, related to the operation and use of Artificial Intelligence, in order to be able to use it to their advantage, distinguishing any improper uses.

On the other hand, Artificial Intelligence would open up new scenarios related to teaching and inclusion, as long as it constitutes a real resource aimed at improving education, without however neglecting the lessons learned, as well as the ethical principles shared by the school. (McKinsey, 2020).

AI can represent a new resource capable of promoting and fostering quality inclusion in schools. If we think, for example, of the so-called multisensory technologies, adopted to facilitate the learning of students affected by autism spectrum disorders, as well as solutions to support students with Special Educational Needs and Specific Disorders of the Learning, we realize that inclusive digital education can only be integrated more and more by AI.

Thanks to the use of AI, even more innovative, inclusive and engaging educational environments could arise in educational institutions, designed to promote interaction with and between students, combining training needs and technological innovation.

A new quality school inclusion can become the key to the educational success of all students. Digital technologies, especially in the school environment, from the earliest stages of development and design must take into consideration the needs and peculiarities of everyone, regardless of age, sex, social affiliation and health condition. Even people with disabilities can benefit from some solutions proposed by AI.

Precisely for this reason the galaxy of digital technologies can intervene significantly by promoting a greater inclusion of people with disabilities in educational, social and work contexts, allowing for better accessibility.

There are several AI solutions that make it possible to break down the barriers to accessibility for people with disabilities. For example, computer vision technologies can help blind people to better perceive the world around them, or speech recognition and translation technologies could offer real-time subtitles for people with hearing impairments. Finally, new robotic systems could increase the capabilities of people with reduced mobility. For this reason, it is essential for the development of digital technologies, not only to think about usability, but increasingly about accessibility.

Above all, those involved in AI have the ability to create systems and solutions that can really break down the barriers for people with disabilities by promoting the development of autonomy in the realization of their own life plan. But, above all, and this is the core of this contribution, AI could specifically favor in people with disabilities the recognition of their own bodily identity and of the distinction between real and virtual as a fundamental epistemological measure to make one's learning fit for oneself. In this context, the research path is complex, mysterious but also fascinating and obligatory. Think, for example, of speech recognition systems, widely used with virtual assistants. These solutions, which help us today to manage many aspects of our life in a simple and natural way, do not yet work well for people with language disabilities but could become the future of a possible digital inclusion.



This happens because, like any Artificial Intelligence system, the basic data on which these solutions are developed do not include samples of these populations.

The problem is very urging: it is estimated that today, more than 1 billion people around the world live with a disability and in the future most people will probably face some kind of temporary or permanent disability, also linked to the effects population aging (WHO, 2021) also because the social and economic effects linked to the lack of inclusion of groups of people with disabilities are significant.

Above all, the OECD (2019) has defined five principles to regulate the impact of AI solutions, opening an important debate that must necessarily involve the world of technology, training agencies, institutions and all those who deal with ethical issues.

Starting from these principles, all the considerations related to inclusion, prejudice, privacy, error, data simulation and social context must be activated to people with disabilities.

To do this it is also necessary, not only, to train new figures prepared on the ethical issues related to the AI solution, but also to extend this training to all teachers, and in particular specialized teachers on disability.

It is fundamental to ensure that people with disabilities can take part in the processes of technological innovation, in order to ensure that they are not left behind by the AI revolution.

This is why it is essential to clarify that the issue of inclusive digital education, must take into account into account AI. In other words, AI could help people with disabilities to better manage learning in the relationship between real and virtual. It could improve also Adapted Motor Activity and, above all, it could favor the Full Inclusion project, making the inclusion of people with disabilities the decisive moment for the realization of an inclusive digital teaching.

Even if this theoretical contribution only proposes a hypothesis to be implemented with a specific experimental model, it is evident that the new dimension of a "technological culture" cannot do without inclusive digital teaching based on AI. Body identity, the intersubjective relationship are the categories that digital technology must promote to help an inclusive society with fewer inequalities and suffering.

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