REBUILDING A NEW HUMANITY BETWEEN EDUCATION AND THE CULTURE OF ALGORITHMS

RICOSTRUIRE UN'UMANITÀ NUOVA TRA EDUCAZIONE E CULTURA DEGLI ALGORITMI

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ABSTRACT
Emerging technologies are potentially limitless, bringing questions and uncertainties that challenge individual freedom. According to Sloterdijk, the history of technology and culture is an attempt to artificially recreate the original uterine stage, a uterodicea. New socio-communicative modalities, correlated to digital technologies, have generated a cognitive restructuring, to which we must respond with a correct digital education, with processes of "literacy of technologies" and with promotion of soft skills for prevention of deviance online and onlife.

Le tecnologie emergenti sono potenzialmente infinite, sollevando interrogativi e incertezze che mettono alla prova la libertà individuale. Secondo Sloterdijk, la storia della tecnologia e della cultura è un tentativo di ricreare artificialmente lo stadio uterino originario, un'uterodicea. Nuove modalità socio-comunicative, correlate alle tecnologie digitali, hanno generato una ristrutturazione cognitiva, a cui dobbiamo rispondere con una corretta educazione digitale, con processi di "alfabetizzazione tecnologica" e con la promozione di competenze trasversali per la prevenzione della devianza online e onlife.

KEYWORDS
Artificial intelligence, education, learning, personalization, assessment, tutoring, ethics.
Intelligenza artificiale, istruzione, apprendimento, personalizzazione, valutazione, tutoraggio, etica.

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Introduction

New technologies are “promising resources”, which understandably speak of questions and doubts, challenging the freedom of each individual. “Sloterdijk considers the history of technology and culture a uterodicy, that is, an attempt to artificially recreate the lost original uterine stage: The whole history of technology and culture will be, according to a beautiful Sloterdeijkian expression, a uterodicy, an attempt to recreate the always lost original uterine stage” (Lucci, 2014), but not in a banal psychoanalytic or generally psychological sense but rather as “a semantic recreation of the medium within which the child welcomes the first signs of his own existence (...) Sloterdijk states this clearly starting from the title of one of his texts, 'Zur Welt kommen – zur Sprache kommen' which combines coming into the world with coming to language, since the world we come into is always a linguistic world” (Idem), therefore, they are yet another environment in which we try to recreate that ancestral condition capable of giving us a sensation of total protection now lost, equally to that experienced, in the womb (Bovalino, 2024). They are the door we pass through to access a new world, while being aware that the digital environment is an artificial declination of individual and collective staging. "The relationship between mother and child is so complex that it can border on the pathological, and the media inevitably act on this, creating a swing of contrasting emotions: even our existence on social media is a continuous oscillation between acceptance and rejection, tense between the wait for a 'like' capable of giving us a fragile momentary joy and the fear of not reaching, with our latest post, the number of shares and appreciations that we expect" (Bovalino, 2024). The media, therefore, as a whole are an ecosystem in continuous evolution, a new habitat in which there are still no rules of coexistence, nor a digital citizenship that allows the people of the web to inhabit this world according to complete relational codes and with due awareness.

1. The digital transition from consumer to prosumer

The intimately human dimension inherent in technologies seems to emerge forcefully precisely at the height of their power and capacity to impact everyday life. As happened in Spielberg's film A.I.-artificial intelligence, technological innovations tend to show themselves in everyday applications as tools used to multiply what is too human in the soul and mind of the creator and users. In 2001,

Mark Prensky published his article ‘Digital Natives, Digital Immigrants’ (Prensky, 2001) in which he uses the definition of ‘digital natives’ to make a generational comparison with the use of new technologies: natives are immersed in digital since birth, while immigrants are those who have had to adopt technologies and adapt quickly, at an advanced age. In other words, over time they have learned to inhabit the network. A few years later, Prensky himself introduced a new profile: that of the ‘digital sage’ (digital wisdom) as a result of the interaction between the human mind and the new tools available to it. The digital wisdom he speaks of is a dual concept, since it refers both to the wisdom deriving from the use of digital to access cognitive abilities that go beyond our innate abilities, and to that which refers to the prudent use of technology to enhance our potential. The advent of new digital media has, consequently, transformed the user from a simple ‘consumer’, as in the case of the television medium, into a prosumer, a producer of information and content. A process that has logically revolutionized the very concept of public opinion. In the virtual communities that feed the network, it seemed that the real possibility, previously unthinkable, of discussing the public debate by influencing political-institutional choices had even materialized. The freedom of expression and the capacity for mobilization that the connection between individuals of the network made people believe that the network was the promised land, the medium that would allow each subject to actively participate in the construction of a new reality. It was the affirmation of an illusory recreation of the world through the techno-magical and playful imaginary that the new media fueled.“The technological device, the medium, acts on our ways of perceiving reality by continually reconfiguring it and man uses it as a useful epistemological tool to understand the world he inhabits, and at the same time the world unfolds before his eyes as a substance to which the media try to give form, but always changeable and precarious, going towards an unlimited metamorphosis” (Fidler, 2000). Marshall McLuhan, another essential reference of mediology, conceived the media as prostheses of the senses of man, capable moreover of creating an environment where man experiences specific cognitive and existential relational forms, providing further elements of reflection that, declined in the present, help us to understand the aesthetic and political power of digital languages (McLuhan, 2007). “From McLuhan's prophecy, which leads to mediologically investigating reality, we move on to the latest dystopia prefigured by Mark Zuckerberg: the advent of the 'Metaverse' as a new possible dimension of living. The advent of the Internet and social networks creates the possibility of inhabiting new environments that fuel a

further mutation of the subject. The subject of the networks, through a contemporary and complementary process of multiplication and subtraction of his own self, can relate this germinated humanity to his experience" (Bovalino, 2024).
This era, definable as the era of biotechnology, is shaped by the increasingly evident desire to build a perfect and immortal man: a very human projection of the sense of precariousness that afflicts us and which has as a direct consequence the illusion of being able to transfer our spirit into indestructible machines, capable of eluding the erosion of time. "The characteristic of this illusion, as well as being tragic in its real consequences, lies in the action of downsizing carried out to the detriment of humanity stained by hybris, the presumption that we can scientifically manage a life that is instead ontologically uncontrollable and of which we can, only superficially, manage and direct events and facts" (Ibidem).
The advent of digital technology, and ultimately of AI, has had the ability to illuminate and make the network operational, becoming the set of a transformation that aims to amplify its potential in the field of education, corporate production and public administration. But it has betrayed the dreams of those who hoped it could constitute the new element capable of contributing to the realization of the utopia of a global digital democracy. Compared to the past, the understanding of the functioning of devices and technologies occurs less or not at all. "Digital natives grow up without being able to fully understand all these tools in a pedagogical sense. The evolution of technology in increasingly user-friendly forms does not allow them to have the opportunities that digital immigrants had, forced to learn, to find solutions to make everything that is IT and technological work and improve. Today's technology, ultimately, makes digital natives simple users. Among the most widespread stereotypes among the new generations is, in fact, that they are highly competent with technology precisely because they are exposed daily, from birth, to the innovations of the IT revolution, but what is emerging today is a generation of fake digital natives, devoid of any IT skills. Around this, day after day, product after product, application after application, a closed virtual world managed by others is being built, from which it is becoming increasingly difficult to escape to become competent, to understand its dynamics. Furthermore, there is an awareness of the dangerous forms of control and the new forms of management of individual experience that digital technologies have applied to our lives and prefigure to be able to implement in increasingly invasive ways" (Marzullo 2023).
The digital revolution has in any case reached a peak phase. After the 'dematerialization of human bodies in the network', the process of 'humanization

of machines' has begun. Artificial intelligence is the instrument of this epochal transformation, a real 'techno-magic' that man invests with powers that go, at times, well beyond their real potential. The main characteristic of artificial intelligence lies precisely in its ability to draw from a lot of data, infinite indications on the future behavior of users. This process allows the development of what Shoshanna Zuboff calls the "market of future behaviors" (Zuboff, 2019). Among the most authoritative scholars on the topic of artificial intelligence there is, among others, Luciano Floridi, whose reflection aims to distinguish reproductive artificial intelligence from productive artificial intelligence. The first seeks to solve problems or perform tasks successfully in view of an end, trying to recreate intelligent behaviors with non-biological means. The second aims to recreate human intelligence not by aiming for the simple result, but by focusing on the ways in which it achieves it. "Floridi's belief is that there is no artificial intelligence autonomous from human will to the point of being able to reach a level such as to be able to conquer the world by subjugating humans. For Floridi, it is man who has built and continues to configure the world and the environment by favoring the pervasiveness and applications in cities and in everyday home life of intelligent technologies. Therefore, it is not technologies that cage the world but man who 'wraps environments with digital technologies'" (Bovalino, 2024). It is a process that Floridi calls enveloping. The pervasiveness of artificial intelligence depends on human will, a revolution that is impossible to stop but that we must face aware of how much man can influence the re-ontologizing process that digital and artificial intelligence implement on our psychic, social and environmental experience. If the technological infrastructure that surrounds the world is designed by man, he becomes the designer, the artist who elaborates affordances (Boccia Artieri et al., 2018). It is a role that allows him to be a good architect, eluding easy temptations to use the power of artificial intelligence to create perfect and functional societies, sacrificing individual freedoms in the name of collective efficiency. The psycho-social problems that artificial intelligence could foster in the new generations are part of a more complex process that risks completely changing society, affecting them first and foremost, the adults of the future. However, it is clear how necessary it is to place the question of artificial intelligence and its social and generative declinations at the center of a new educational paradigm.2. Man Vs Machine

Artificial intelligence is to be considered a key element in the development of the self, it too is a 'technology of the self', as Foucault argues, perhaps the most powerful that humans have ever confronted among all those he himself has

developed to date. “The notion of the digital native gives rise to important unintended consequences, as Danah Boyd (2014) argues: not only is it loaded with meaning, but it also masks the unequal distribution of technological skills and media literacy among young people, presenting an inaccurate image of young people as uniformly prepared for the digital age and ignoring the presumed level of privilege required for being born in that age group. Worse still, by not doing the work necessary to help young people develop general digital skills, teachers and the public end up reproducing inequalities, since more privileged young people often have greater opportunities to develop these skills outside the classroom” (Marzullo, 2023). Despite this premise, it is necessary to underline how the digital potential experienced in social media can produce, at least under certain conditions, transformative processes of subjectivation that configure social media as technologies of the self, in which social media become social spaces where peer-to-peer practices and experiences of adolescents incorporate techniques of self-care and care of others in a constant dialogue with another. The future of society, therefore, depends on the developments of artificial intelligence: an awareness that could become worrying considering that we have no knowledge of what it could be or become in the future, what lines of development it could undertake, what human design will inform and conform it. Perhaps we should propaedeutically move away from a dystopian and anxiety-inducing vision of artificial intelligence, taking for granted the attempt of Pio Alfredo Di Tore who asked ChatGPT what role it thought it had had in the drafting of a scientific article for which the author had used it to generate information and process texts; ChatGPT's response was: “I am just a language processing tool, a technology that uses advanced algorithms to generate text based on the input data provided. I do not have the ability to think, feel or have personal opinions. My purpose is to provide information and generate useful texts for users. That said, I can be used as a partner in writing a scientific article, since I can provide information and generate text based on user requests. However, it is important to note that the use of a language processing technology like me should not replace the creativity and expertise of the author of the article. The content generated by me must always be reviewed, verified and cited correctly and the author must always be responsible for the final content of the article” (Di Tore, 2023).

If man becomes just a machine, if in his relationships with others he deprives himself of affective knowledge, if the heart is taken away, only the brain remains, at the mercy of a powerful tool recently on the scene. The theme is the “challenge”

of artificial intelligence on technological progress and the risk of an “artificial heart”. Pope Francis himself dedicated the entire message of the 2024 World Day of Peace to this theme: “The development of a technology that respects and serves human dignity has clear implications for educational institutions and for the world of culture. By multiplying the possibilities of communication, digital technologies have allowed us to meet in new ways. However, there remains the need for continuous reflection on the type of relationships to which they are directing us. Young people are growing up in cultural environments pervaded by technology and this cannot fail to call into question the methods of teaching and training.

Education in the use of forms of artificial intelligence should aim above all to promote critical thinking. It is necessary for users of all ages, but especially young people, to develop a capacity for discernment in the use of data and content collected on the web or produced by artificial intelligence systems. Schools, universities and scientific societies are called to help students and professionals to make their own the social and ethical aspects of the development and use of technology. Training in the use of new communication tools should take into account not only misinformation, fake news, but also the disturbing resurgence of ‘ancestral fears [...] that have been able to hide and strengthen themselves behind new technologies”. Unfortunately, once again we find ourselves having to fight “the temptation to create a culture of walls, to raise walls to prevent encounters with other cultures, with other people and the development of peaceful and fraternal coexistence. The consequences cannot be assessed a priori” the Pope continues. There are pitfalls that should not be underestimated, but “in reality the insidious problem underlying this entire debate consists in the fact that man has always cultivated the temptation and ambition to be able to control, harness and understand everything”. In reality, we are already controlled: we do not look for the news, but we stumble upon it. We already have artificial intelligence on our satellite navigators and every platform we open already knows what we liked and offers it to us again. So every social profile is different from the other, with different choices of content or different readings of the same news. "The point is that the news that reach us, stumbling upon it, we are not able to know if it is true or false". It is like a nuclear weapon, if not controlled there is the risk that it will destroy everything. We need a new criterion of authority that can only be evaluated in a relationship between people. Like any impressive innovation, artificial intelligence will not question the human mind, but will cause profound transformations in the management of oneself and in the conception of life. No technology will be able to

replace man, because technology is only a tool with which we delude ourselves into being small Gods capable of mastering the world. Artificial intelligence will facilitate many activities, making the complex simple, but it will certainly not make men either gods or slaves to machines and technology will once again show itself as a placebo that transfigures and illusorily elevates existence but continues to lack answers to questions about the meaning of life, technology being only a medium that multiplies power without mystical inspiration and capable of calming the spirit of man.

2. The role of AI in school-educational contexts

In light of all that has been said so far, artificial intelligence has already revolutionized, and continues to do so, many sectors of society, and education is no exception. In recent years, research on the use of AI in general and special education has grown, with promising results that indicate the potential of this technology to improve the learning of each student.

It is therefore good to be able to carefully consider an overview of the latest research regarding AI in the field of education. First of all, the different applications of AI in intelligent tutoring systems, in automated assessment tools and in learning personalization systems should be discussed, and in some cases re-discussed.

As already mentioned, AI can be used in its reproductive sense, previously introduced by Floridi, to improve student learning systems. Some of the most promising applications include 'intelligent tutoring systems': John Self, a pioneer in the field of ITS, has explored the challenges and potential of adapting the education system to the individual needs of students through artificial intelligence. His work has helped define the architecture and methodologies of ITS and in 2018 the International Society for Artificial Intelligence in Education (IAIED) deemed it appropriate to award him a lifetime achievement award in recognition of the substantial advances made in the science and engineering of intelligent human-technology ecosystems that support learning: these systems can provide students with real-time, personalized feedback and support, adapting to their pace and learning style. They can be used to teach a wide range of subjects, from math to reading and writing, provide explanations of complex concepts and even offer real-time feedback on assignments or practice problems. This type of personalized attention ensures that each student receives tailored guidance, based on their

individual needs and how they learn most effectively. Additionally, intelligent tutoring systems can use instant feedback to identify knowledge gaps: when students interact with AI capabilities, it can identify areas where they may be struggling. By highlighting these gaps, ITS helps to focus on specific topics that need further study, ensuring that the understanding of the subject is anything but superficial.

AI adapts to the pace of the questioner, adapting lesson plans to reinforce concepts effectively. This personalized approach ensures that tutoring sessions are optimized for maximum understanding and retention. With instant feedback, teachers can continuously refine their lesson plans and teaching strategies. By analyzing common questions and misconceptions among students, they can adapt content delivery to proactively address issues, improving learning outcomes. Whether it's reviewing previous lessons or asking for clarification on a particular topic, AI provides immediate access to relevant information at any time. This accessibility allows students to take control of their learning, having precise answers available whenever they need them. Personalized learning experiences could transform the educational landscape by providing fruitful learning opportunities that directly address the needs and preferences of the students who use them. Additionally, personalized learning experiences provide an opportunity for collaboration among students. In online courses or virtual classrooms, students from different backgrounds and locations can use AI to engage in interactive learning activities. This not only fosters a sense of community, but also allows for the exchange of ideas and perspectives. Let's not forget that the use of AI also offers valuable support by providing personalized assistance for problem solving. One of the main benefits of such use is its ability to improve language skills. The AI model can help the learner articulate their thoughts more clearly by providing suggestions and corrections as they type problems or questions. It can also assist in language translation, making it easier to understand difficult concepts in the target language. It does not just provide answers, but stimulates critical thinking. If you give an incorrect answer or make a false assumption, the program can guide you to understand why it is incorrect and encourage you to think differently. This type of interactive feedback fosters a deeper understanding of both basic and complex concepts. In the age of flexible classrooms and distance learning, the conscious adoption of AI in educational settings opens up exciting possibilities for both students and educators. Its ability to engage students based on their real needs and

deliver content at their own pace and preferences makes education more accessible, engaging, and impactful for students around the world.

Another goal to highlight in this context is the facilitation of collaborative learning, a powerful tool that allows students to engage in meaningful dialogues, exchange ideas, and learn from each other's perspectives. By actively participating in group discussions and projects, students can broaden their horizons and develop critical thinking skills that benefit them both academically and personally. It is, however, important to consider several factors that make consulting AI for educational or teaching purposes correct and effective: first of all, it is essential that the information provided by AI systems is accurate and reliable. Since educational institutions rely on a well-established body and hierarchy of knowledge, any incorrect premise or unverified information could have detrimental effects on students' learning outcomes. Furthermore, feedback on grammar and sentence structure is essential when using AI for teaching purposes. Although it can generate coherent texts, its outputs may contain grammatical errors or clumsy sentences. To maintain high standards of language proficiency of students, teachers should check that such systems do not mislead students. Speech and language recognition technologies can be used to create more engaging and interactive learning experiences. For example, they can be used to develop educational games or to allow students to interact with virtual characters. Data analysis systems could be used to collect data regarding students' learning levels and consequently improve both teaching and learning processes.

Finally, as with any resource allocation decision made by public or private entities, it is of paramount importance to ensure that funds are used effectively and equitably. It is necessary to assess whether investing in AI-based tutoring systems is in line with the broader goals of improving the accessibility and quality of education for all students.

Conclusions

These examples demonstrate the potential of AI applied to the field of teaching and education, making learning processes personalized, accessible and engaging. The advent of Artificial Intelligence in the educational sector should not be considered in a simplistic way a threat to the human factor, but rather an interesting opportunity for improvement and inclusion of all the components of the relational

system. The task of AI-based technologies should be to support and stimulate all educators, taking on some of the automatisms and most burdensome aspects characterizing the teaching-learning processes in order to allow more time for fundamental pedagogical actions.

While it is true that AI can easily manage functions such as correcting homework and tests, preparing personalized study materials or planning the individual or special needs of children, it certainly cannot replace the decisive role that the human factor plays in promoting critical thinking, creativity, empathy and social skills.

It would be desirable, instead, that the introduction of AI in the classroom would give the role of the educator and teacher an additional value: in fact, the latter should take on the responsibility of becoming a sort of catalyst for interpersonal skills, guiding children along increasingly complex and technology-interconnected paths, making them capable of using knowledge and experiences in an ethical way. The adults of reference will therefore have the delicate and difficult task of preparing the youngest for an existence in which AI will have a decisive role, especially in some areas, educating them to understand the vastness and complexity of the implications linked to the use of technologies, to critically evaluate them by posing, without any limits, ethical and social problems that will inevitably arise. In conclusion, therefore, the success of AI in the educational field and its systematic use within the various fields through which human existence unfolds will depend, to a large extent, on the availability and ability to adapt to these new possibilities of educators, who only in this case will be able to make the most of the technological potential to serve more effective pedagogical and learning dynamics. It is obvious that this new approach will require adequate training both in terms of technical skills and in the pedagogical field, without leaving behind the philosophical and legal issues relating to the use of AI in the educational field. Digital skills, in fact, do not only concern technical competence in the management of tools and applications, but also of languages and, above all, of contents. The development of critical thinking must be a priority in Media Education (Rivoltella, 2018) and the teaching methodology must be rethought, because without trained teachers and innovative methodologies, even new media risk being used according to obsolete logics. As Maria Luisa Iavarone suggests (Iavarone & Aruta, 2022), transversal digital skills must be understood "as those skills that cross and touch, transversally, all the skills attributable to the three areas defined by the EU LifeComp framework" (Sala et al., 2020). They are able to assist

the collaborative and participatory co-construction, by students, teachers and educators, of formal, non-formal and informal learning environments that require dynamic cognitive and bodily adaptability to govern their complexity. Hence the need to equip ourselves with Media Educators with a strong educational-cultural, as well as technological, identity, able to operate in schools, as well as in the non-formal field, in the third sector and in at-risk territories (Iavarone, 2019) where digital increasingly represents the space of communication and interpersonal relationships. For this reason, third millennium educators need specific training that allows them to use technologies as an intrinsic resource in learning contexts. This approach, from a Civil Pedagogy perspective (Iavarone, 2022), sees digital as a community technology (Rivoltella, 2021) to be read and interpreted, also through the right emotional skills. We must not forget, in fact, that emotions are not irrational at all (Marzullo, 2022), but are constitutive elements of ethical reasoning, because the individual is, first of all, a sentient social subject, capable of listening to his own emotions and those of others, of understanding their deepest meaning and of using them rationally according to precise management rules that flow into actions and, therefore, into relationships.

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