WYŻSZA SZKOŁA GOSPODARKI EUROREGIONALNEJ IM. ALCIDE DE GASPERI W JÓZEFOWIE

ROSA INDELLICATO

Pegaso Telematic University, Italy

rosa.indellicato@unipegaso.it
ORCID: orcid.org/0000-0001-9585-0726
DOI: doi.org/10.13166/HR/CZEH4690

IDENTITY METAMORPHOSIS: THE ROLE OF PEDAGOGY IN THE AGE OF TECHNOLOGY

Abstract

The purpose of this contribution is to highlight how the educational phenomenon in our time is marked by techno-scientific imperialism that seems to have no limits. One thinks for a moment of the mighty progress of the digital and artificial intelligence that represents its highest expression. In particular, it is interesting to reflect on the belief that has led us to think that the artificial can become a model for what is natural. The idea that the natural datum can be thought of as imperfect with respect to the artificial is not at all foreign to the projects of the other revolution, no longer biological, but digital today, which is committed to creating an artificial world in which to learn to exist in the real world, according to the projects of artificial intelligence and the so-called Metaverse. Think for instance of the ChatGPTs that are based on machine learning techniques. This means that the solutions they propose to the problems posed by users derive from the statistical recombination of what they find on the web, so there is no distinction between what is produced on the web, on the same topics, by experts and by less expert or even non-experts.

Keywords: *identity hybridisation, pedagogy, artificial intelligence, technologies*

Pedagogy and technology: food for thought

Technical developments are daily changing the habits and behaviour of every human being to the point of shifting the frontiers of the possible. It is certainly a change of perspective that also brings into play our *modus vivendi*, in fact *the world in which we live today and in which everything is decided over our heads, is a technical world; to the point that we can no longer say that, in our historical situation, there is also technology, but rather we must say: history now takes place in the condition of the world called „technology; or rather, technology has now become the subject of history* with which we are only *constoric*»[1].

[1] G. Anders, *L'uomo è antiquato. Sulla distruzione della vita nell'epoca della terza rivoluzione industriale*, tr.it., M.A. Mori, Bollati Boringhieri, Torino 1992, p. 3. Cfr. M. Latini-A. Meccariello (eds.), *L'uomo e la (sua) fine. Saggi su Günther Anders*, Asterios, Trieste 2014.

It can be said that everything *works in the name of and thanks to technology*, think for example of politics as marketing[2] techniques and ideology or religion as *media techniques*, etc.

What is disappearing is the primacy of man as the ‚measure of all things', obscuring human identity itself[3].

In a nutshell, what is happening is precisely an identity metamorphosis, compromising the biological stability of the human being and foreshadowing new development processes in which machine and living end up blurring both conceptually and materially.

We are literally in the vortex of an identity crisis and a hybridisation between man and machine[4] is looming, as is happening at the moment. In this regard, Marchesini writes: «I am convinced that man has differentiated himself (and is increasingly differentiating himself) from other species precisely because he has been able to construct hetero-references that have brought him closer to, not further away from, the non-human world»[5].

The risk is that of a hybridisation with the universe of technologies and towards a condition of isolation and self-referentiality of the human.

Pedagogical research can remedy and provide solutions, but at the same time it can restore man's ability to reflect on his identity, his meaning and his destiny.

In configuring itself as a science that reflects on education and with respect to it plans operational interventions, but also interventions of transformation, pedagogy is strongly urged to come to terms with technologism, the Internet, artificial intelligence[6], the metaverse, the new electronic tools that have introduced an anthropological mutation not only in the way of knowing but also in the way of relating to each other. «AI was the first idea, which was followed by machine learning and, more recently, neural networks and deep

[2] Cfr. J. Hamari – V. Lehdonvirta, V., *Game design come marketing: come le meccaniche di gioco creano la domanda di beni virtuali*, in *Giornale internazionale di scienze aziendali e gestione applicata,* 5 (1), pp. 14-29, 2010.

[3] Cfr. E. Erikson, *Identità: giovani e crisi*, Norton, New York 1968.

[4] Cfr. U. Galimberti, *Psiche e techne. L'uomo nell'età della tecnica*, Feltrinelli, Milano 1999.

[5] R. Marchesini, *Post-human. Verso nuovi modelli di esistenza*, Bollati Boringhieri, Torino 2002, p. 83.

[6] Cfr. L. Chen – P. Chen & Z. Lin, *Artificial intelligence in education: A review.* Ieee *Access,* 8 (2020), pp. 75264 – 75278.

learning. *Basic Machine Learning* is the first level of AI. […] In other words, it employs algorithms to order large amounts of data; builds a mathematical model from it; and then makes determinations or predictions about certain tasks without specific prior instructions. The result is still a determined task – hence it is called *Narrow Al* – but the task is mostly performed better than humans can do it. Examples of *Narrow Al* include tasks such as image classification or face recognition. Neural networks are a series of algorithms, modelled essentially on the example of the human brain, that process data using several distinct layers and connections to recognise patterns and provide predictive analysis. Deep learning occurs when many neural networks are interconnected and trained with huge amounts of data, so that they can automatically learn and formulate representations using elements not entered by humans»[7]. We are living in a dimension like the one outlined by the philosopher Florindi: *inforsphere*, which sees the world as a set of interactions of information systems[8]. «At a minimal level, the infosphere denotes the entire informational environment consisting of all informational entities, their properties, interactions, processes and mutual relations. It is an environment comparable to, but at the same time different from, cyberspace, which is only a region of it, since the infosphere also includes offline and analogue information spaces. At the highest level, the infosphere is a concept that can also be used as a synonym for reality, where we interpret the latter in informational terms. In that case, the idea is that what is real is informational and what is informational is real»[9].

In this sense, technological logic and the logic of life[10] are increasingly intertwined, producing transformations, it seems to us useful for pedagogy to take on a specific questioning, analytical and design task. In fact, it is up to pedagogy to re-think the relationship between *anhtropos* and *téchne*

[7] A. Spadaro-P. Twomey, *Intelligenza artificiale e giustizia sociale. Una sfida per la Chiesa*, in *La Civiltà Cattolica* 4070, I (2020), pp. 121-131.

[8] Cfr. L. Florindi, *La quarta rivoluzione. Come l'infosfera sta trasformando il mondo*, Raffaello Cortina Editore, Milano 2017, p.29.

[9] Ibidem, p. 44.

[10] Cfr. F. Pinto Minerva, *L'ibridazione tra nuovo umanesimo e utopia pedagogica*, in Rivista *Metis*, Anno I, n. 1-12/2011, in http://www.metisjournal.it/metis/anno-i-numero-1-dicembre-2011-i-bridazioni-temi/35-saggi/132-libridazione-tra-nuovo-umanesimo-e-utopia-pedagogica.html

in the light of a vast work of reconceptualisation of the traditional categories proper to Humanism[11].

In reality, the phenomenon of technology is not mysterious, but it is a *human, too human* phenomenon because it is we, in one way or another, with different responsibilities who enable or hinder its outcome and relevance in our lives, so much so that one speaks of *digital humanism*[12] .

The statement *you can't go back* has only one authentic meaning: most people, whether promoters or users of technology, do not intend to give it up.

In fact, if, on the one hand, technology has opened up new scenarios of a bio-technological reality, on the other hand, it has led human beings to a dependence of acting and existing on the products of technology. Precisely in this situation, faced with the crisis of such anthropocentric principles and instances, the prospect of a post-humanist pedagogy that knows how to restore to man his particular human condition and his being in the world together with *others* (man, animal, machine, etc.) can be useful[13].

If it is true that technology and technologies are the human way of being in the world, to the point that it is difficult to distinguish where one ends and the other begins, so that they cannot be thought of merely as instrumentalities, the transformations taking place consequently oblige us to reflect not only on the phenomenon of the pervasiveness and widespread use of technological instruments, but also and above all, as mediators, on the effects and modifications that they produce in the human being, in society and in the formation of the person. Guardini writes in this regard: *In order to become masters of the "new*, we must rightly penetrate it. We must dominate the forces unleashed in order to make them wait for the elaboration of a new order that is related to man. But, in the final analysis, this work cannot be accomplished if we take

[11] Ibidem.

[12] *Digital Humanism* is in this sense the formula called upon to prefigure the future of the *Digital Humanities* in a critical manner, i.e. neither apocalyptic nor apologetic. (D. Berry, *The computational turn: thinking about the digital humanities*, in *Culture machine* 21, 12 [2011], pp. 1-22).

[13] Cfr. F. Pinto Minerva, *Intelligenza artificiale e post-umano. Pedagogia e utopia*, in *Rivista di Scienze dell'Educazione*, gen-apr 2021, Vol. 59 Issue 1, pp.52-67. Cfr. anche F. Pinto Minerva, *Umano e post-umano. Una nuova frontiera della pedagogia*, in P.Barone, A. Ferrante & D. Sartori (a cura di), *Formazione e post-umanesimo. Sentieri pedagogici nell'età della tecnica,* Raffaello Cortina Editore, Milano 2014, pp. 103-131.

technical problems as our starting point; it is only made possible by starting with the living man. These are, it is true, problems of a technical, scientific and political nature; but they cannot be solved except by proceeding from man»[14].

We certainly do not want to demonise technoscience as long as it serves mankind, which is why we believe that techno-scientific progress needs an ethical-educational government that can stem the crisis of education and positively focus on the relationship between modern technology and *bildung*, in order to highlight the centrality of education as a process of re-appropriation by man of his own essence, unfortunately annihilated in the time of modern technology[15].

Digital sustainability: technologies as a resource for education

Communication technologies have been considered as technologies of education and learning as tools that should improve teaching-learning processes through the multilingual codification of knowledge, its multimedia transmission and its controlled use. For these reasons, it is fundamental to speak of the interactionist paradigm, which makes it possible to place at the centre of the educational experience the *interpersonal relationship* that is based on inter-subjective involvement in a system of *cultural communication*, whose educational process is realised through infinite connections with each and everyone, from the various personal histories of which each of us is the bearer to emotions and feelings. Through the interactionist paradigm we move from the *educational technologies* of a didactics based on a transmissive model to a communicative model[16] based on the *interactive paradigm* emphasising

[14] R. Guardini, *Lettere dal lago di Como. La tecnica e l'uomo*, tr.it. G. Basso, Morcelliana, Brescia 1993, p.97.

[15] Cfr. M. Valdarchi, *Educare alla presenza: l'educazione come ri-appropriazione dell'umano nell'epoca della tecnica in Martin Heidegger*, in *La* condizione *tecno-umana tra eccesso ed eccedenza*, Morcelliana, Brescia 2021, pp. 331-338.

[16] Cfr. L. Galliani, *Tecnologie e valutazione: bio-bibliografia di un intreccio*, in *Giornale Italiano della Ricerca Educativa*, anno XII, maggio 2019, pp. 101-115.

the importance of establishing cooperative, collaborative, knowledge-building forms of learning. Hence, «the idea of digital sustainability brings attention to a far-reaching concept, encompassing the sustained expansion of individuals' choices and the equitable improvement of their welfare prospects. To speak of digital sustainability is not to put technical capability at the centre of attention, but to keep man at the centre of thinking and as the end that qualifies progress. Using digital technology ethically today, respecting human ecology, means trying to turn innovation into a sustainable digital world. It means directing technology towards and for human development, and not simply seeking progress as an end in itself. Although it is not possible to think and realise technology without specific forms of rationality (technical and scientific thinking), putting digital sustainability at the centre of interest means saying that technical-scientific thinking is not enough. For there to be freedom, we need conscience and consciences to question technology by orienting its development towards the common good»[17].

Certainly pedagogy is called upon to take on the task of promoting a new humanism that is a serene and critical interpreter of the impetuous technological developments[18], «we must set out towards a humanism of solidarity capable of promoting a lifestyle that rejects the culture of discarding by opening up new social perspectives typical of a *culture of encounter*»[19] . This is because *in the encounter with the other, each person has the possibility of finding the original place of his or her own identity and responsible freedom. The personal being of each one takes shape and matures by virtue of an original relationality generating other relationships that determine the reasons for being together, in a co-existence situated in the recognition of "you* that constitutes each one in his or her *selfhood*.

[17] P. Benati, *Le stagioni dell'IA*, in C. Caporale – L. Palazzani (a cura di), *Intelligenza Artificiale: distingue frequenter. Uno sguardo interdisciplinare*, Edizioni Cnr, Roma 2023, p.44.

[18] Cfr. R. Alessio, *Prolegomeni a una pedagogia dell'intelligenza artificiale*, in *Orientamenti Pedagogici*, gen-mar 2022, vol. 69 Numero 1, pp. 29-44

[19] A. Martino, *Processi di rappresentanza politica e schemi distributivi dell'opinione pubblica nell'era dell'eccedenza tecnocratica*, in C. Caltagirone-L. Cucurachi (eds), *La condizione tecno-umana tra eccesso ed eccedenza*, Morcelliana, Brescia 2021, p. 204

Saying oneself as *I* means recognising oneself and being recognised in the saying of the *you* which in turn is said in the saying of the *I* who recognises it as *you*. Self-affirmation, the consciousness of the *I* is illuminated and becomes self-consciousness (*Bewußtsein*) thanks to the word that the *you* addresses to the *I*, recognising it as another in whom it recognises itself»[20]. Without the encounter with the other, the human disappears to remain an individual, this is the danger that threatens man in the age of technological domination. The danger lies not so much in the misuse of new technologies or in the supposedly catastrophic essence, but rather in the oblivion of man's very essence.

In an article of 18 May 2020 in *La Stampa*, the philosopher Cacciari and 16 other well-known influential Italian intellectuals denounced the danger of an improper use of technology within the educational horizon, realised through *distance learning*, highlighting the latter's tendency to flatten the complex process of education on the reductive dimension of instruction, hoping, on the other hand, for a sudden rediscovery of that essence of Scholè that coincides with sociality[21].

In the *technological* age, so to speak, inspired by the logic of technology, it is important to go back to the fundamentals of human living in order to better see our possibilities, to assess our limits, to hearten our hopes; these are objectives that pedagogy has always pursued and that today, in the technological age, it is called upon to pursue even more.

We are convinced that the way in which the educator is called to be a model is the most appropriate way to reawaken the sense of the human being in the human being himself.

If the model's actions are to be truly essential, then his or her actions must not be guided by mere arbitrariness or the vain repetition of predefined schemes; rather, his or her actions will consist of listening and knowing how

[20] C. Caltagirone, *Etica dei servizi alla persona e alle relazioni di aiuto. Orizzonti valoriali di riferimento*, Edizioni Studium, Roma 2017, p. 41.

[21] Cfr. M. Cacciari, *La scuola è socialità. Non si rimpiazza con monitor e tablet*,18 maggio 2020, in https://www.lastampa.it/cultura/2020/05/18/news/la-scuola-e-socialita-non-si-rimpiazza-con-monitor-e-tablet-1.38857890/

to develop the faculty of attention in his or her students, as the philosopher Simone Weil would say[22].

If the excess of technology consists in its determination of man's destiny as a resource, educational action must respect man in what he is, it must not disregard the emotional-affective-relational that constitutes the *conditio sine qua non* of the cognitive and leads the student to the awareness of what he is and what he must be, reawakening in him the sense of the human.

Enormous tasks are incumbent on education: to begin with, it is necessary to educate to a technological mentality, which does not at all mean falling into the artificialistic world, but rather to assume a rational, balanced and measured attitude that places man in front of his responsibilities towards his fellow human beings and towards nature, which constitutes his vital environment to be safeguarded. Today's school is no longer the school of teaching, and therefore of traditional learning to read, write and do arithmetic, but is increasingly becoming the school of education, and therefore of education also in the use of technology[23].

«If technology, the artificial, invades the natural through the smoky ways of information, and if ICTs promise and realise a fusion between man and machine, then what we are witnessing is a reality becoming techno-reality and a man becoming techno-human»[24] that is why the age of technology is also a time for the preservation of the human, thinkers, educators must prevent the blind engulfment of technology from reducing man himself to a mere resource to be employed..

Beyond the different symbology with which the school is defined, the transition from the *paper school* to the *computer school*[25]. Recalcati writes in this regard: «What prevails today is a hypercognitivist model that would like to completely emancipate itself from any concern for values, in order to

[22] Cfr. S. Weil, *Attesa di Dio*, Adelphi, Milano 2008.

[23] Cfr. P. Limone, *Ambienti di apprendimento e progettazione didattica. Proposte per un sistema educativo transmediale,* Carocci Editore, Roma 2012.

[24] P. Benanti, *La condizione tecno-umana. Domande di senso nell'era della tecnologia*, EDB, Bologna 2016, p. 75.

[25] Cfr. M. Recalcati, *L'ora di lezione*, *L'ora di lezione. Per un'erotica dell'insegnamento*, Einaudi, Torino 2014.

strengthen the skills of solving problems rather than knowing how to pose them. The most appropriate metaphor is no longer botany but information technology. At stake are no longer crooked screws to be straightened but information to be stored: heads function like computers, like cognitive maps that demand timely updating. Knowledge extends horizontally and loses all verticality. It is simply a matter of loading as many files as possible according to the utilitarian principle of maximum benefit obtained with minimum effort […]. But what is inexorably lost in this model is the relationship of knowledge with life»[26].

A novelty that has its link with the past and finds a premonitory sign in the thought of Martin Heidegger. Indeed, foreshadowing many of the issues that have become topical today on the subject of technological development and post-modernity, the German philosopher stated that we live in an era in which even the last corner of the globe has been conquered by technology and has become economically exploitable, in which any event, in any place and at any time, has become rapidly accessible. It is precisely with reference to the idea of planetary technology that Heidegger states that man *wanders through the deserts of a ravaged earth*, warning us of a threat characterised by the abandonment of being and raising the issues we still question ourselves with today[27].

Technological education promoted by schools must unite in one term *téchne* and *logos*, i.e. doing and knowing. In schools, technology education must promote a new humanism aimed at creating the conditions for a better society for a better man. Indeed, it can introduce new ideas, help build complex mental representations, foster mathematical and logical explorations, build strategies and help find innovative solutions, encourage sharing ideas with others, and seek exchanges. It seems today that computer science is on its

[26] Ivi, pp. 14-15.

[27] Cfr. M. Heidegger, *Saggi e discorsi, Mursia*, Milano 1976. Scrive Galimberti: *Technology, by absorbing the world of life into itself, has resolved men and things in their functionality» (U. Galimberti, Psiche e Techne. L'uomo nell'età della tecnica, cit., p. 397). The progress of technology is fine as long as technology retains its nature as a means and does not turn into an end. Mounier recalls that technology is ,for man, if he masters it, a powerful possibility of liberation. What we must therefore reproach the civilisation of technology is not that it is inhuman in itself, but that it is not yet humanised and therefore serves an inhuman system. (E. Mounier, "Manifeste au service du personnalisme*, in *Oeuvres,* t.I, du Seuil, Paris 1961, p. 584).

way to becoming a direct ingredient of general education. It is undoubtedly, a growth tool for thinking, one of the information networks that innervate our technological civilisation.

So today the question on the relationship between man and technology precisely from the educational point of view must be completely reformulated in the direction of no longer what man can do with technology, but what technology can do for man. So reflection on technology intersects with the educational and ethical-anthropological question. This means that technologies, being enabling, are to be thought of, beyond the various reductionisms and determinisms, as structural and structured anthropological and ethical-educational modalities through which, by transforming themselves and the world, men experience their daily relationships with themselves, with others, and with the things of the world.

Indeed, technology, if well used, can mean a better tomorrow for all. And an intelligent use of technology depends on a correct technology education that a school that wants to be up to the times must promote.

Access to the new technologies can enrich and supplement teaching, but the democratic space of the school is a privileged place for the construction and sharing of rules[28] and is also the only guarantee for building inclusion and citizenship and for guaranteeing educational equality for all as far as possible, knowing full well that the first step to be taken to make this equality possible is not the imposition of a single school model to which everyone must conform, but, on the contrary, the adaptation of the school model to the needs of each individual pupil, who needs the *flesh and blood* presence of the educator and his humanity so that the young student can take on a significant role in the educational relationship and in the construction of a society to which he himself is educated[29] .

[28] Cfr. A. Arfelli Galli, *La scuola come luogo di costruzione e condivisione delle regole*, in M. Corsi, R. Sani (a cura di), *L'educazione alla democrazia tra passato e presente*, Vita e Pensiero, Milano 2004, pp. 169-176.

[29] Cfr. R. Indellicato, *La dispersione scolastica nel terzo millennio. Analisi e prospettive pedagogiche tra vecchi bisogni e nuove sfide*, PensaMultimedia, Lecce 2020, p. 182.

Certainly, technologies provide relational, cognitive, and emotional opportunities that were undoubtedly precluded before and that provide enormous advantages to those who know how to use them.

As social, cultural, political and economic dimensions of the contemporary world and as elements that contribute to the variable human capacity to ‚give' meaning to his way of being in the world, to construct and share his meanings, technological devices, being essential dimensions of the human condition insofar as they influence the perception and understanding of the world and contribute to shaping the vision of things and the judgement of facts, cannot, therefore, not be the object of philosophical discernment, which takes the form of an ethical discernment that must be capable of correctly assessing the possibly positive and negative impacts[30] of each new technology that affects the totality of the human being and its fundamental relationships.

This explains the need for an evaluation of the positive possibilities and negative consequences of the use of technologies, which is a specific task of pedagogical reflection.

This, while recognising their creative use for one's own good in all its manifold conditions of existence, operates a discernment that allows one to effectively define the field of ethical qualification of the use of certain technological devices, without imposing unique normative standards, since ethics, being a perspective of humanisation of the human, allows one to identify the best profile to achieve, thanks also to the use of technological devices[31], the best *form* of anthropological richness. This is also in view of the fact that technologies, rather than being, exclusively, instruments predisposed to the real domain, are, in reality, primarily mediating and expressive modes of human subjectivity.

[30] Cfr. M. Costa, *Nuovi modelli eutagogici per la formazione continua. Il diritto soggettivo alla formazione e lo sviluppo dell'agency capacitante per la transizione digitale*, in Rivista *Scuola democratica*, 1/2023 gennaio/aprile, pp. 77-92.

[31] Cfr. A. Fabris, *Etica per le tecnologie dell'informazione e della comunicazione*, Carocci, Roma 2022.

References

Alessio R., *Prolegomeni a una pedagogia dell'intelligenza artificiale*, in *Orientamenti Pedagogici*, gen-mar 2022, vol. 69 Numero 1, pp. 29-44.

Anders G., *L'uomo è antiquato. Sulla distruzione della vita nell'epoca della terza rivoluzione industriale*, tr.it., M.A. Mori, Bollati Boringhieri, Torino 1992.

Arfelli Galli A., *La scuola come luogo di costruzione e condivisione delle regole*, in M. Corsi, R. Sani (a cura di), *L'educazione alla democrazia tra passato e presente*, Vita e Pensiero, Milano 2004, pp. 169-176.

Benanti P., *La condizione tecno-umana. Domande di senso nell'era della tecnologia*, EDB, Bologna 2016.

Benati P., *Le stagioni dell'IA*, in C. Caporale – L. Palazzani (a cura di), *Intelligenza Artificiale: distingue frequenter. Uno sguardo interdisciplinare*, Edizioni Cnr, Roma 2023, p.44.

Berry D., *The computational turn: thinking about the digital* humanities, «Culture machine» 21, 12 [2011], pp. 1-22.

Cacciari M., *La scuola è socialità. Non si rimpiazza con monitor e tablet*, 18 maggio 2020, in https://www.lastampa.it/cultura/2020/05/18/news/la-scuola-e-socialita-non-si-rimpiazza-con-monitor-e-tablet-1.38857890/

Caltagirone C., *Etica dei servizi alla persona e alle relazioni di aiuto. Orizzonti valoriali di riferimento*, Edizioni Studium, Roma 2017.

Chen L., Chen P., Lin Z., *Artificial intelligence in education: A review.* Ieee *Access,* P), pp. 75264 – 75278.

Costa M., *Nuovi modelli eutagogici per la formazione continua. Il diritto soggettivo alla formazione e lo sviluppo dell'agency capacitante per la transizione digitale*, in Rivista *Scuola democratica*, 1/2023 gennaio/aprile, pp. 77-92.

Erikson E., *Identità: giovani e crisi*, Norton, New York 1968.

Fabris A., *Etica per le tecnologie dell'informazione e della comunicazione*, Carocci, Roma 2022.

Florindi L., *La quarta rivoluzione. Come l'infosfera sta trasformando il mondo*, Raffaello Cortina Editore, Milano 2017.

Galimberti U., *Psiche e techne. L'uomo nell'età della tecnica*, Feltrinelli, Milano 1999.

Galliani L., *Tecnologie e valutazione: bio-bibliografia di un intreccio*, in *Giornale Italiano della Ricerca Educativa*, anno XII, maggio 2019, pp. 101-115.

Guardini R., *Lettere dal lago di Como. La tecnica e l'uomo*, tr.it. G. Basso, Morcelliana, Brescia 1993.

Hamari J., Lehdonvirta V., *Game design come marketing: come le meccaniche di gioco creano la domanda di beni virtuali*, in *Giornale internazionale di scienze aziendali e gestione applicata,* 5 (1), pp. 14-29, 2010.

Heidegger M., *Saggi e discorsi,* Mursia, Milano 1976.
Indellicato R., *La dispersione scolastica nel terzo millennio. Analisi e prospettive pedagogiche tra vecchi bisogni e nuove sfide*, PensaMultimedia, Lecce 2020.
Latini M., Meccariello A. (eds.), *L'uomo e la (sua) fine. Saggi su Günther Anders*, Asterios, Trieste 2014.
Limone P., *Ambienti di apprendimento e progettazione didattica. Proposte per un sistema educativo transmediale,* Carocci Editore, Roma 2012.
Marchesini R., *Post-human. Verso nuovi modelli di esistenza*, Bollati Boringhieri, Torino 2002.
Martino A., *Processi di rappresentanza politica e schemi distributivi dell'opinione pubblica nell'era dell'eccedenza tecnocratica*, in C. Caltagirone-L. Cucurachi (eds), *La condizione tecno-umana tra eccesso ed eccedenza*, Morcelliana, Brescia 2021.
Mounier E., *Manifeste au service du personnalisme*, in *Oeuvres*, t.I, du Seuil, Paris 1961.
Pinto Minerva F., *Intelligenza artificiale e post-umano. Pedagogia e utopia*, in *Rivista di Scienze dell'Educazione*, gen-apr 2021, Vol. 59 Issue 1, pp.52-67.
Pinto Minerva F., *L'ibridazione tra nuovo umanesimo e utopia pedagogica*, in Rivista *Metis*, Anno I, n. 1-12/2011, in http://www.metisjournal.it/metis/anno-i-numero-1-dicembre-2011-ibridazioni-temi/35-saggi/132-libridazione-tra-nuovo-umanesimo-e-utopia-pedagogica.html.
Pinto Minerva F., *Umano e post-umano. Una nuova frontiera della pedagogia*, in P. Barone, A. Ferrante & D. Sartori (a cura di), *Formazione e post-umanesimo. Sentieri pedagogici nell'età della tecnica,* Raffaello Cortina Editore, Milano 2014, pp. 103-131.
Recalcati M., *L'ora di lezione*, *L'ora di lezione. Per un'erotica dell'insegnamento*, Einaudi, Torino 2014.
Spadaro A., Twomey P., *Intelligenza artificiale e giustizia sociale. Una sfida per la Chiesa*, in *La Civiltà Cattolica,* 4070, I (2020), pp. 121-131.
Valdarchi M., *Educare alla presenza: l'educazione come ri-appropriazione dell'umano nell'epoca della tecnica in Martin Heidegger*, in *La* condizione *tecno-umana tra eccesso ed eccedenza*, Morcelliana, Brescia 2021, pp. 331-338.
Weil S., *Attesa di Dio*, Adelphi, Milano 2008.