

### Learning, digital media and affection: proposals for a new paradigm in higher education

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This article relates the presence of digital media with the necessary knowledge for integral formation of human being, conjunction between rational knowledges - capacity for synthesis and analysis - and affective-emotional knowledge - capacity to live with others – propitiating *savoir vivre* and well-thinking. In order to contribute to the critical reflection on the power of digital technology as a way to advance in learning processes, the proposal is based on the theory of complexity. A bibliographical revision followed by an exploratory research consisting of comparative analysis of sites dedicated to innovative proposals in education was carried out. In conclusion, the presence of digital media in the educational environment presents practical advantages for the rational acquisition of knowledge. However, digital media leave affective gaps to be filled through the teaching of ethics between human beings in personal, social and collective life.

**Keywords:** Learning. Digital media. Education. Affection. Communication.

## Introduction

In this article, we intend to bring reflections for the construction of a foundation which will allow settling proposals of collective action for what we may call “cultural learning” in the context of the massive presence of digital media. What we call “cultural learning”, although seemingly redundant, is a learning directed towards the complexity of the reality of culture (which has also become a wide transcultural measure)<sup>(c)</sup>, based on the knowledges of knowledges, that is, in the conscience of the very process which occurs between the media and the faculties of learning, be it in the school environment, be it outside it, in the day to day life, in social life, at home, in the streets and even in the imaginary ambit, in the fictional universe, of fantasy, of dreams.

How can we seize the power of digital technology and of the social communication media as a complexity gain and as a means of advancing our learning processes? In order to answer this question, we will pose a reflection in three instances: 1) The knowledge of knowledge in the face of artificial intelligence; 2) The digital media in the imaginary and affective universe; 3) The digital media as instrument of learning: a change in paradigm?

In this last stage of the text, we drew on an exploration which analyzed sites and collaborative platforms where the proposals explicitly stated they were dedicated to searching for innovative solutions for education. The exploratory aspect aimed to identify the categories of the innovative nature and the tendencies of the innovation proposed. For this purpose, four sites and one collaborative platform were studied through a systemized analysis of the content of categories extracted from this very analysis. Such categories, nowadays, serve as a base for a broader study. For this current text, we are interested in the results of the exploratory phase.

We know that learning and knowledge are preceded by a long experience. Learning may be understood by the manner in which people acquire knowledge, develop competencies and change behavior. Its temporality is, in many cases, completely different from the velocity of information, which is characterized by a short duration and brevity. If the information is explicit, the learning process frequently adopts an implicit form.

But what is knowledge? It is not only, of course, about scientific knowledge – recent, rare and limited –, but that which qualifies the species: *homo sapiens*. Every time a human being organizes or reorganizes his relation with himself, his peers, objects, signs, cosmos, he involves himself in an activity of knowledge, of learning<sup>1</sup>. (p. 123)

Learning is not limited to rational discourses. “There are body-thoughts, affect-thoughts, perception-thoughts, sign-thoughts, concept-thoughts, gestural-thoughts, machine-thoughts and world-thoughts”<sup>1</sup> (p. 123). Learning through digital media is a space of knowledge, states Lévy, inhabited and animated by a collective intelligence, in permanent dynamics reconfiguration, capable of “[...] inventing mutating languages, constructing virtual universes, cyberspaces in which new communication forms are sought”<sup>1</sup> (p.123). This space of knowledge propitiated by digital media should not be confused to a kind of abstract recipient of all possible knowledges, but a specific kind of knowledge, which reorganizes, ranks, inserts in its informational means, its

<sup>(c)</sup> The Transcultural is a concept by which a cultural problem might be analyzed in the most various cultures with specific interpretations, but sustaining the same problem.

own kind of knowledge, which are results of other spaces of knowledge. Varied spaces organize themselves based on affinities and proliferate in a molecular manner, and are constituted from a multiplicity of interdependent spaces. Lévy defends that the digital media are anthropological spaces, a form of reorganization of culture, of language, of education and of human knowledge.

### Knowledge of knowledges in the face of artificial intelligence

Based on the epistemological proposal by Morin<sup>(d)</sup>, we assume that the more we know and understand about the process of knowledge, seeking its mechanisms, triumphs and obstacles, the better the conditions to seek the source of errors, shortcomings, failings and gaps, and the well-thinking for better learning. Well-thinking here must be distinguished from the being, who, on the contrary, was the source of many illusions in the process of knowledge. As we will see further on, well-thinking<sup>(e)</sup> means thinking not only in ideal conditions of rationality, but also thinking in good affective and emotional conditions. It is precisely at this point wherein lies the fault of knowledge of present knowledge about the space occupied by digital media. There is a need for greater and better investigation on emotional and affective processes involved and which involve digital media and types of relationship resulting from these processes.

This demands an exercise of thinking and knowing which can reattach disconnected knowledges such as scientific, philosophical and artistic. Exercise which has been scarcely practiced, given the requirements of hyperspecialization of the scientific sector, with its frontiers, customs and its border guards.

It concerns the auto-reflexive aptitude, which is the key quality of conscience. The scientific thought is still incapable of thinking itself, of thinking of its own ambivalence and its own adventure. Science should make peace with philosophical reflection with philosophy, as philosophy, whose mills turn empty from lacking grains of empirical grains to grind, should make peace with science. Science should make peace with political conscience and ethics. What is a knowledge that can't be shared, which stays esoteric and fragmented, which doesn't know how to become vulgar unless in degrading itself, which commands the future of societies without commanding itself, which condemns the citizens to the growing ignorance of the problems of their destiny?<sup>4</sup> (p. 11)

In regard to the knowledges of the so-called technologies of communication, it is important to make various distinctions between terms which are commonly used to eventually say the same thing, but that, however, remit to different realities. It is the case of computing and informatics, of the artificial intelligence which differs from live intelligence and from the quality of our relations with machines and living beings. There is a live computing, proper of living organisms which, in the conception of Maturana and Varela, auto eco-organize through the phenomena of *autopoiesis*<sup>(f)</sup> and of adaptation. Concerning the central nervous cerebral system, the authors explain that it is a mistake to compare it to an artificial computer:

<sup>(d)</sup> A noção de conhecimento do conhecimento foi estruturada por Edgar Morin no tomo 3 da obra *O Método*<sup>2</sup>, publicado originalmente em 1986. Trata-se de uma proposta de revisão do conhecimento baseada na diferença entre inteligência (arte estratégica), pensamento (arte dialógica e arte de concepção) e consciência (arte reflexiva).

<sup>(e)</sup> Edgar Morin<sup>3</sup> retoma essa noção de Montaigne e Pascal para explorar o modo que permite apreender em conjunto texto e contexto, o ser e seu meio ambiente, o local e o global, o multidimensional e o complexo; em suma, todas as condições do comportamento humano.

<sup>(f)</sup> The notion of *autopoiesis*, proposed by Humberto Maturana and Francisco Varela in their studies of the relations between biology and culture, comes from the Greek term *poiesis* which means production. According to Mariotti, "Autopoiesis means autoproduction. The term first appeared in international literature, in 1974, in an article published by Varela, Maturana and Uribe, to define living beings as systems which continuously produce themselves<sup>5</sup>. (p. 1)



The nervous system (or organism) was not projected by anyone. It is the result of derivation of phylogenic units centered in its own dynamics of states. Therefore, the adequate thing is to recognize it as a unit defined by its internal relations, in which alterations only act modulating its structural dynamics, that is, as a unit endowed of operational enclosure. In other words, the brain does not 'collect information' from the environment, as is frequently stated, but constructs a world, when it specifies which configurations of the environment are disturbances and what changes these unleash in the organism<sup>6</sup>. (p. 188)

On the other hand, there is also an artificial computing, generated by technique and by calculation, and, later, by that which was conventionally called technology, in the sense of a consequence of technical improvement which generated reflection and knowledges of the technique while technical. This computation essentially differs from live computation because it is not the "result of phylogenic derivation of its units" but rather, the result of calculation and human programming of artificial systems. We know some machines and artificial devices are considered intelligent as far as they possess reasoning capacity (applying logical rules to a set of available data in order to reach a conclusion), learning capacity (learning from mistakes and successes in order to act in a more efficient manner in the future), the capacity of recognizing patterns (visual and sensorial patterns, as well as behavior patterns) and inference capacity (the capacity of applying reasoning to situations of our daily life).

Even though the development of artificial intelligence makes rapid progress and occupies increasingly more space in our lives, it is necessary to keep in mind that the process of human intelligence goes through a complex that the machine – although endowed of an emotional programming – does not know. The cerebral knowledge of the humans is the offspring of action at the same time as it allows this action. The sensorial terminations of the nervous system commanded by cerebral activity are in contact with the exterior and interior world, allowing communication between both. The dialectic action/knowledge becomes action/knowledge/communication. In its turn, the development of actions and communications between exterior and interior leads to the development of a sensibility of the profoundness and superficiality of being, that is, in its affectivity. "The development of this dialectic makes the neural-cerebral apparatus be, at the same time, so intimately subjective and so openly objective<sup>5</sup> (p. 65).

In human knowledge, the opening to the exterior and the dialectics of interior/exterior, objectivity/subjectivity are not limited by conscience<sup>(6)</sup>. However, the possibilities of opening artificial intelligence are limited by the absence of conscience. We see, therefore, that it is in the auto-reflexive aptitude that human adventure and the imperative of knowledge of knowledge reside. This would allow live intelligence (which is also emotional/affective) to continue controlling, with relative autonomy, the artificial which is – and needs to continue being – in service of life, of the relations between living beings, of well-thinking.

<sup>(6)</sup> Here we do not refer to the binomial conscience/unconsciousness, but to the ample notion of intellectual conscience while auto-reflexive aptitude, which includes what we call unconsciousness.

In this context, learning must be a conscious process in which knowledge starts to be seen not only in terms of its utility for the individual who is learning, neither in terms of its utility in relation to the other, to life and to the world,



but also and most importantly while freedom of the spirit. The problem in this process is that it may only be reached through the exercise of knowledge of knowledge, which has not been occurring culturally. Ordine<sup>7</sup>, in his manifest about the utility of the useless brings an anecdote which reveals what happens when we are immersed in an environment: Two Young fish are swimming and, at a certain point, meet an elder fish swimming in the opposite direction who, signaling, says “How is the water, boys?” The two fish swim a little further. Then, one looks at the other and says, “What the hell is water?” Just like the two young fish, we do not actually realize what is the water where we develop our existence.

However, if like the elder, and with wisdom, we have the conscience of what is the process of knowledge, of what are these pseudo intelligences which, artificially, command part of our lives and determine part of our routines in work, school, social relations, then we will have better conditions to understand the role of certain knowledges that are at times considered useless in our lives, such as culture, education, arts, philosophy, and that interact continuously with the utilitarian knowledges which we also need to develop. It is in this sense that learning is a freedom of spirit:

The spirit/mind (*mind*) is, at the same time, the center of subjections and liberties. It is the center of subjection when prisoners of biological heredity, cultural heritage, imprints suffered, imposed ideas and of a power such as an imperative superego in his own interior. When some stop being submitted to orders, myths and imposed beliefs become, at last, questioning subjects, then begins the freedom of spirit<sup>8</sup>. (p. 282)

It is necessary to know in which waters we swim. Submerged in a digital media, it is necessary to know of the effects of this environment upon us in order for it to stop being an environment to become a world to be explored and questioned, with no subjection.

### **The digital media in the imaginary and affective universe**

We may say that the digital media assumed a viral space in our days or, in other words, a space of contagion. It is a contagious environment, according to Han<sup>9</sup>, because it has an emotional appeal, its temporality is that of transmission of affections, and because of this, for the author, the digital media is an affective environment.

This being said, learning of the digital media takes us to a quest that seems important here about affection: that of understanding affection of a space of fluctuation/intermittence of body and soul. When we say space of fluctuation we mean the non-linear dimension of feelings, emotions and perceptions which make us understand, in a fragile and complex manner, any of the denominations of human affections. The affections balance themselves in the non-linearity between what is fragile and transitioning and what is complex and long-lasting. From our view, what supports this fragility and complexity is its capacity of being flexible and durable; transient and at the same time fixed. Accepting the spaces and states of emotional (and



imaginary) intermittence seems to us reasonable. Such perception implies – maybe - in a change of paradigm of that which is important to teach.

The digital media is, therefore, contagious because it flirts directly with the sensation of having a voice (opinion), proximity (presence) and forms of knowledges (learning), although it is much more about a sensation than real presences, opinion and learning. The communication via digital media:

Is immediately produced in the emotional or affective plane. The contagion is a post hermeneutical communication, which gives nothing properly to read or think. It does not imply a reading, because it is only prone to a limited acceleration. A piece of information or content, even of little significance, may rapidly spread on the net, like an epidemic or pandemic. It is not stalled by the weight of meaning. No other means of communication possesses a comparable contagion power<sup>9</sup>. (p. 69)

With effect, we find ourselves nowadays apparently free of the industrial era, which enslaved and explored use, but the digital devices bring with them a new form of exploration and bullying to work and to learning. More effective in exploring us, because due to its mobility, transforms any place into a work place and transforms every moment into a working moment. It is not possible to escape work anymore. The smartphone makes the very labor mobile. Deceptively, this devices promise freedom, but end up exerting upon us a fatal coercion.

[...] a coercion to communicate [...] Our relation to digital devices becomes obsessive, compulsive. Social media massively reinforce this communication bullying which, ultimately, values the logic of capital, which is that of velocity”<sup>9</sup>. (p. 46)

According to Han, more communication means more capital. The smartphone is sometimes a digital mirror, a new form of projection, the post childhood mirror stage. It opens way to a new narcissistic stage, a sphere of the imaginary. Through this device, it is not the other who speaks.

The smartphone is a digital device which functions with an input-output of scarce complexity. It erases all form of negativity. This is equal to unlearning to think in complex terms. The smartphone conducts to the atrophy of forms of the world, at the same time as it obscures long duration and slowness<sup>9</sup>. (p 34)

In his critic towards the *homo digitalis*, Byung-Chul Han tells us we live an unprecedented crisis, “a critical moment of transition” due precisely to the transformations produced by the so called “digital revolution” (p. 22). Han analyzes the book *The Psychology of Peoples*, by Gustave Le Bon<sup>9,10</sup>, written in 1895, which defined modern times as the age of masses, as a: “period of transition and anarchy”. For Le Bon, the age of masses represents the divine rights of the crowds, which comes to substitute the divine right of the kings. The new masses are now the digital swarms. The swarm manifests properties different of those of the masses.



The digital swarm is not a mass because it is intrinsically devoid of soul or spirit. The spirit congregates and unifies. The individual swarm is composed of isolated individuals. The mass structures itself in a completely different manner<sup>9</sup>. (p. 22)

A digital swarm lacks a soul or a spirit of mass.

The individuals who come together in a digital swarm do not develop a sense of us, which would consolidate the crowd into a mass that would be a subject of action. The digital swarm, contrary to the masses, does not have its own coherence. It does not express itself through a voice<sup>9</sup>. (p.22)

The *homo digitalis* forms, therefore, a concentration with no reunion, a multiplicity with no innerness, without soul or spirit. To exemplify this, Han mentions the *Hikikomori*, Japanese word which literally means isolated at home. The *hikikomori* are individuals more or less young of age, who close themselves in the domestic sphere, avoiding contact with other people. They are solitary beings who voluntarily install themselves in front of the display.

The *socius* cedes its place to *solus*. What characterizes the order of factual society is not as much as the crowd but the solitude. It regards an order immerse in a generalized decline of the common and communal. Society disappears<sup>9</sup>. (p. 26)

Decreasing distances, the digital media is a form of presence, favoring the immediate presence. While traditional media, such as the radio and the television, were mass media for mediating massive communication, the digital media such as blogs and social networks liquidate the mediation of communication. Each of us produces and sends information, decreasing, as well, the power of the journalists and other opinion leaders. “Representation makes way to presence, or to copresentation” (p.28).

Digital communication makes it possible for affection to be an object of immediate transmission. For Han, “the digital media is an affective media” (p. 15). The affective state, however, does not develop any potent form of action, nor of meeting. If digital interconnection favors symmetric communication, it creates, however, a false sense of proximity and connection. It distances us increasingly from the other; produces an asymmetry of the gaze; we no longer look other people in the eyes. While analyzing communication through *Skype*, Han observes how the camera produces the illusion of presence, it is no longer possible to look the other in the eye, seeing as when someone looks at the eyes of the other in the screen, the other has the impression that the speaker is looking slightly downwards due to the fact that the camera is installed in the upper part of the screen. The advantage propitiated by the encounter and the immediate presence, has to deal with the asymmetry in the gaze. The digital media therefore divests communication of its corporal and tactile character, making it so that real meetings disappear and become a communication of resistance.

We are far from what Frans de Waal<sup>11</sup> called empathy. He proposes a gaze towards nature to make our society gentler. Empathy, he says, is created by contact and physical presence, by the contagion of the gaze, by smiling and proximity of skins. De Waal

knows the tendency of the modern western society to preserve individual liberty, but also knows of the natural tendency of the *Homo sapiens* to be pushed towards one or another emotional direction by his peers. We could say that there is a rational will of Independence betrayed by the emotional gregarious and empathic tendency in individuals who are physically present:

It is precisely here that empathy and solidarity start – not in the superior regions of thought or in the capacity to reconstruct consciously what we would feel if we were in another’s situation. Empathy started as a form far more simple, with the synchronization of bodies – running when others run, laughing when others laugh, crying when others cry, yawning when other yawn<sup>11</sup>. (p. 75)

When the contrary occurs, that is, when one is deprived of the possibility of live contact, and following the logic of illusory immediate contact, digital communication promotes an almost pornographic exposure of the private sphere and, consequently, of our intimacy. In a certain way, it “privatizes communication” because it shifts the production of information from public to private. It has to do with what Han calls “[...] iconic-pornographic bullying [...]” (p.14) in similarity to the spectacle, of the intense and excessive necessity of seeing and being seen, of showing oneself as an image. Today, through resources of digital media, we produce a large amount of images. May this massive production be interpreted as a reaction of defense and flight? Such excess of images is precisely this iconic-pornographic bullying.

The imperative of devices that produce images in our time and the consequent reification of the imagery, produced the so-called Paris Syndrome, name that designates an acute psychological disturbance which affects, above all, Japanese tourists when they visit the City of Lights. These syndrome began to be verified with these tourists with the arousal of hallucinations, anguishes, psychosomatic symptoms such as vertigo, sweating or tachycardia, followed by derealization and depersonalization, after realizing the immense difference between the ideal image of Paris, which the Japanese have before the trip, and the reality of the city, which is completely different from the ideal image. Maybe the compulsive tendency of the Japanese have of photographing the city is an unconscious and aesthetic defense, which seeks to defuse the awful truth.

Another syndrome which appears in the age of digital devices such as personal computers, smartphones, tablets, etc., was the Information Fatigue Syndrome (IFS), an information fatigue, psychological disease caused by the excess of information. The bearers of this syndrome complain of a growing paralysis of the analytical capacity, attention disturbances, general anxiety or incapacity to assume responsibilities. This syndrome was described by the British clinical psychologist David Lewis, in 1996. The IFS first affects people who in their professional activity have to produce a large quantity of information for a long period of time. One of the main characteristics of this disease is the decrease or paralysis of the analytical capacity. It is precisely this capacity that makes us apt to think; the excess of information leads to the atrophy of thinking. We know that the analytical capacity consists of discriminating and comparing, in the logical or perceptive material, all that is not essentially pertinent; ultimately, it is the capacity which permits us to distinguish what’s essential from what



is not essential. Our judging faculty is debilitated precisely because of the proliferation of information.

Among the symptoms of the IFS we also find the incapacity of assuming responsibilities. We know that responsibility is an act related to certain mental and temporal conditions, to begin with, implies a reliable compromise with something or someone, supported by trust and attachment. Such a syndrome shows that people suffering of IFS who do not want to form attachments or responsibilities, are defined by the absence of compromises, by arbitrariness and by the short term commitments.

Trust is an act of Faith which becomes obsolete when information is easily available. Trust allows us to relate to others, even when we don't know them very well. The possibility of an easy and rapid acquisition gravely mars the trust. In this sense, the media are responsible for the actual crisis in trust. The digital connection facilitates the acquisition of information, making both trust and the social practice increasingly less important<sup>9</sup>. (p. 85)

The digital media allows the possibility of a totally filing of life and relations, and makes the notion of trust completely obsolete, which is then substituted by the notion of control. We believe it is urgent to base the social bond in the relation with digital learning, which consists in encouraging a deterritorialized civility, which corresponds to the postulation of a reciprocal learning as a mediator in the relations between men. The richness of the association of social bonds with digital media is the favoring of a collective intelligence in which we will be able to associate competences in such a way that we might act better together than separated.

Digital learning cannot be reduced to a sum of data results. It is, in the sense we defend here, first and foremost a learning to live (*savoir-vivre*) inextricable from the comprehension of the world. Learning in the digital world, in the ample sense, is also an encounter with the incomprehensibility of the world, the other, the comprehension of the incapacity of reducing the other or the world into a synthesis or syntax. "The base and objective of collective intelligence is the mutual recognition and enrichment of people, and not the worship of fetishized or hypostatized community"<sup>1</sup> (p. 29). It is, according to Lévy, "[...] an intelligence distributed everywhere, incessantly valued, coordinated in real time, which results in an effective mobilization of competencies"<sup>1</sup> (p.29).

### **Digital media as instrument of learning: a change in paradigm?**

We are, possibly, in the middle of a paradigmatic change which affects education. Probably, this change is not just the reflection of the insurmountable presence of the digital media in our lives, but of a larger complexity of culture, in which, we might say that the dominant capitalistic model – nowadays exclusive, with its utilitarian logic and profit imperative, has great responsibility and is at the origin of the unbridled development of the technologies at first in service of the mode of industrial production of goods and then in the consequent necessity of service offering and the thirst for information. With the aid of technique, everything became easier. We don't know how to exactly define when and how knowledge began to be in service of the very



technique, becoming then technology. What we do know is that it was a long process of paradigmatic transformation. In the words of Nuccio Ordine:

It is not by chance that in the last decades humanistic disciplines have started to be considered useless and have been marginalized not only in the school and university curriculums, but especially in the government budgets and in the resources from foundations and private entities. Why invest money in an ambit condemned to not yielding profit? Why destine resources to knowledges which won't bring rapid and tangible advantages?<sup>7</sup> (p. 33)

The paradigmatic change which at times affect us and affects education does not necessarily reside in the space occupied by the digital means of learning in the educational environment, but in the space which these occupy in our lives, be it inside or outside the school. In this sense, there may be an acknowledgement of the usefulness of knowledges which go beyond the logic of profit, efficiency and of the pragmatic productivity, are the cultural and spiritual bases that constitute potential for the autonomy of subjects and for their freedom of spirit. According to Morin:

Freedom of spirit is fed and strengthened: 1. By curiosities and openings to the exterior (of what is said, known, taught, received); 2. By the capacity to learn by oneself; 3. By the aptitude to problematize; 4. By the practice of cognitive strategies; 5. By the possibility of verifying and eliminating the error; 6. By invention and creation; 7. By reflexive conscience, that is, the capacity the spirit has of self-examination, self-thinking, self-judging and 8. By moral conscience<sup>8</sup>. (p. 283)

Let us return, therefore, to the notion of well-thinking, and to the learning conditions which are not only logical-rational but also affective-emotional for the development of the freedom of spirit and its autonomy, of the knowing how to live with oneself, with others and the world.

If digital media permit easy and immediate access to information of every order; if they possess a certain degree of intelligence capable of transforming them into tutors of acquisition of information and logical knowledges, as is the case of the new educational technologies, of online learning applets, of educational game, etc.; they may constitute useful and effective tools for studies and for the processes of teaching-learning. However, they won't fulfill their role of formation if not placed on solid bases, in the affective-emotional ambit and in the *savoir vivre* ambit. And the task of constructing these bases will not happen with the aid of machines but with the transmission of the knowledge of knowledge of life, of the very human being.

We are not trying, with this statement, to negate the role of digital media in education. They occupy – and will increasingly occupy – legit spaces of formation notably in the individualization of learning which succeeds the current massive schooling. There is, today, a tendency to recognize that each individual has his own learning strategies, his own ease and limitations, aptitudes and dreams. In this sense, digital tools of teaching-learning allow the individualization of the formation process



and this presents advantages. However, the more space is given to individuality, the higher the risk of fomenting individualism and all kinds of social-affective deficiencies.

We have seen how the massive use of digital media puts the individual in an illusory relation of presence and of relation to the other, how these possibilities of perception and expression of affection are atrophied, for example, when interactions occur in mostly in the digital media. We have seen a series of new mental, cognitive and spiritual disturbances linked to the excess of participation in the digital media (Information Fatigue Syndrome, Paris Syndrome, feeling of loneliness, affective emptiness) and know of the suspicion that there many others such as addiction, anxiety and depression.

On the other hand, in an exploratory research on innovative proposals in education in France and in Brazil<sup>(h)</sup>, we have noted that these center in some guiding and recurrent pillars which we synthesized in the following manner: 1) The necessity to return to a connection with nature (gardening projects in school, field trips, external didactic spaces such as parks and garden environments for the lessons); 2) The need of encouraging community spirit (solidarity, cooperation, collaboration); 3) The need of breaking with the spatial organization in the traditional classroom (classroom, laboratories) and to create multimedia and multimodal spaces for learning; 4) The need to approximate the external social nuclei from the school environment (parents, teachers, students, community); 5) The need to foment transdisciplinarity through projects and transversal research; 6) The need return to artistic and corporal knowledge, and 7) The use of technological tools to access program content with personalized follow-up by learning tutors.

The digital technologies appear here, thus, as an innovation pillar in education. However, they constitute only one item among a series of other pillars which seem to be in the center of educator's concerns – including the set of administrators, entrepreneurs, researchers, teachers and parents, who appear in our researches as agents of the current educational thinking. What draws attention is the ethical dimension of human formation which is being brought forth not in the form of a discipline among others, but in a transversal manner. We return, with this, to the final proposal of Edgar Morin, in the last volume of *The Method*, which regarding ethics, declares:

The foundation of ethics is in a crisis in the western world. God is absent. The Law was desecrated. The social superego does not impose itself unconditionally and, in some cases, is also absent. The sense of responsibility shrunk; the sense of solidarity weakened<sup>12</sup>. (p. 27)

We emphasize here that by associating the pillars cited above to the predominance of ethical issues in the interest of the educators, we include the development of an individual ethic (*savoir vivre*), of a social and collective ethic (living with the other) and, moreover, of a participation ethic in the live organization of the world (living in the world, and not before the world). This signifies a conscience of the minuscule character of ever living being in the cosmic environment and its unlimited gigantism and, at the same time, the fundamental role of each one, each being, each species, each system in the immensity of the collective of living beings. It is about safeguarding our

<sup>(h)</sup> Research carried out by the NN group, whose exploratory stage consisted in analyzing sites of innovative proposals for education in France and Brazil. The following sites were accessed and observed: <http://www.portaldoeducador.org/> ; <https://red.reevo.org/> ; <http://coletivogaibrasil.org/> ; <http://www.cidadeescolaaprendiz.org.br/> ; <https://printemps-education.org/> .



relation to life, to the environment, to other living beings, and of letting go of control and the domination of the world, of establishing a closer relationship with the exterior world (living nature and others) and being freer with the interiority of each one.

There is an ethical dimension to be preserved, or perhaps rescued, in the knowledge of the body and its relations to interiority/exteriority. It is the ethics of taking care of oneself and the other, but also of the world. For it is necessary to educate the new generations, the so-called digital natives, on the recognition of their own bodies, which are not only images on the flat surface of a screen, but made of physical, mental and spiritual matter. It is not only the presence/absence in the instantaneity of a photo posted and soon erased from social networks, but the presence entirely present, a daily companionship which is there and not only seen, the feeling of being in the world here and now.

## Final considerations

At last and to conclude, we might say it is necessary to educate men to the learning of the journey, that which Vernant<sup>13</sup> called, in his studies about ethics and politics, the conjunction between Hestia (interior journey, sedentary, closed upon humans and the wealth it harbors) and Hermes (exterior journey, nomadic, vagrant, always traveling the world). The lesson of the bridge Vernant refers to is one of the greatest metaphors in communication. The internet is a network made of several bridges, connecting several possible routes to one another. The technical media (telephone, television, smartphones, computers and operating systems, etc.) are bridges that connect people to each other. We can't live without all these bridges anymore, however, amongst all of them, among all these forms of connections between people, it is necessary to remember that every human being to be educated is also, in himself, a bridge.

In order to be ourselves, it is necessary to stretch ourselves to what is foreign, stretching in and towards it. To remain closed in one's identity is to lose oneself and ceasing to be. We know ourselves, build ourselves through contact, exchange, the commerce with the other. Between the shores of oneself and the other, man is a bridge<sup>13</sup>. (p. 198)

What we called cultural learning in the beginning of this reflection is a learning process directed towards the complexity of the reality of culture, precisely a conscious learning of the bridges that interconnect living beings in the world, among themselves, in and outside species, and in themselves. Such learning is based in the knowledge of knowledge; especially in the case of the object of this current reflection, in the construction of a conscience of the knowledge process which occurs between the information of digital media and the learning faculties, but also of the *savoir vivre* and well-thinking.

Finally, we would like to propose the trail of *autopoiesis* as an option for the paradigmatic change we are going through now in regard to the relations we established with knowledge and its consequences to education. As Maturana and Varela<sup>6</sup> stated, the living systems are machines that produce themselves and no

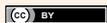
other machine is capable of that. The world we live in is constructed by us from our perceptions and the space we attribute to artificial machines – systems *autopoiese* – depends on the perception we have of them. It is fundamental that we know how to teach the distinction between autopoietic systems and non autopoietic systems. If we should not want to have the control of living systems to which we are intrinsically connected to, it is necessary to know how to control the space we concede to digital media in our lives.

### Authors' contributions

Both authors actively participated in all stages of elaboration of the manuscript.

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### References

1. Lévy P. A inteligência coletiva. Por uma antropologia do ciberespaço. Rouanet LP, tradutor. 8a ed. São Paulo: Loyola; 2011.
2. Morin E. O método – 3. O conhecimento do conhecimento. Silva JM, tradutor. 3a ed. Porto Alegre: Sulina; 2005.
3. Morin E. Sete saberes necessários à educação do futuro. Eleonora C, Sawaya J, tradutores. São Paulo: Cortez, Brasília: Unesco; 2000.
4. Morin E. Ciência com consciência. Alexandre MD, Doria MAS, tradutores. 11a ed. Rio de Janeiro: Bertrand Brasil; 2008.
5. Mariotti H. Autopoiese, cultura e sociedade [Internet]. São Paulo; 1999 [citado 10 Maio 2018]. Disponível em: [www.humbertomariotti.com.br](http://www.humbertomariotti.com.br)
6. Maturana H, Varela F. A árvore do conhecimento. As bases biológicas da compreensão humana. Mariotti H, Diskin L, tradutores. 2a ed. São Paulo: Palas Athena; 2002.
7. Ordine N. A utilidade do inútil: um manifesto. Bombassaro LC, tradutor. Rio de Janeiro: Zahar; 2016.
8. Morin E. O método – 5. A humanidade da humanidade. Silva JM, tradutor. Porto Alegre: Sulina; 2002.
9. Han B-C. No enxame: reflexões sobre o digital. Pereira MS, tradutor. Lisboa: Relógio d'Água; 2016.
10. Le Bon G. Psychologie des foules. Paris: Félix Alcan; 1912.
11. De Waal F. A era da empatia. Lições da natureza para uma sociedade mais gentil. São Paulo: Companhia das Letras; 2010.



12. Morin E. O método – 6. Ética. Silva JM, tradutor. 4a ed. Porto Alegre: Sulina; 2011.
13. Vernant J-P. A travessia das fronteiras: entre mito e política. Barros MAL, tradutor. São Paulo: Edusp; 2009.

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