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Technologies as a presence: openings for teaching and learning

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ABSTRACT

In this text, we discuss human knowledge produced in a scenario where digital technologies are present. To thematize, we start from a discussion about technology in different contexts, showing that the way it has been produced, at each time, interferes and modifies the ways in which human beings are in the world. The study, based on the literature, more specifically that of a phenomenological philosophical nature, intends to contribute to discussions that show necessary changes in the educational sphere, promoted by the ways in which human beings think, act, and communicate today. Thus, it is addressed to pedagogical action as openings, that is, possibilities for teaching and learning today, culminating with the idea of the genuineness of each human being in being together with other humans and products of humanity.

KEYWORDS: Knowledge. Education. Hermeneutics. Collective Intelligence.

INTRODUCTION

Being human undoubtedly implies being socially articulated with people and things that inhabit the world. In this sense, at school we constantly talk about the importance of getting involved with technology, as it is the result of human development. When created, technology populates the world in such a way as to demand an appropriation of man, almost always in contexts broader than those that made its existence possible. Getting involved in what development presents itself requires rescuing the product whose involvement is subtracted. We understand that it is enlightening and necessary for education to bring biases from the historicity of the human with technology to understand the unveiling and the unveiled to contribute to the construction of people's educational project.

Aware that there is not a straight and certain path for this purpose, we have been studying and aligning with the authors with whom we found paths that would contribute to teacher training, to deal with the complexities of contemporaneity. We are at a crossroads and, given the many possible paths to be followed, our professional experiences urged us to look more closely at the technological world, trying to understand it historically because of what the communicative process in the teaching action calls us daily.

The directions to be followed at this crossroads were delineated from a first question: which paths open to the production of knowledge permeated by the possibilities of teaching and learning in a scenario in which intelligence technologies are present? These paths bifurcate into other questions that inquire how the human knowledge with the digital technologies (DT) in different contexts, showing how it has been produced; by the ways in which human beings are in the world with technology; by changes in the educational sphere, promoted by the ways in which human beings think, acting and communicating through digital information and communication technologies permeated today; it also inquires about the possibilities that open up for teaching and learning by being together in the same space, human being and technology.

Thus, we started the walk by reading the technological world, excavating it with the intention of clarifying it, of bringing elements that contribute to its understanding, exposing the finding of the emergence of orality to the constitution of the cybernetic world, where the previous links the past, launching itself into the future, showing the presence of technologies as what is present and remains so. In the middle of the text, we expose our understanding of the emergence of writing and its importance for humanity, the creation of the press and its role in the circulation of knowledge on a large scale until entering the world of intelligence technologies, due to a new way of knowledge conception, based on the work of Batista (2016), developed during investigations carried out and guided by the Study and Research Group on Teacher Education (GEForProf).

FROM ORALITY TO WRITING: WAYS OF UNDERSTANDING THE WORLD

> The meaning of a text outweighs its author not occasionally, but always. Therefore, understanding is never just a reproductive behavior, but it is, in turn, always productive (GADAMER, 1999, p.444).

Writing is showing oneself, it is exposing what is in one's heart. Maybe that is why writing is not always easy. However, the experience of writing has brought to all of us the possibility of disseminating knowledge, of systematizing it, moving from an oral society to a written society. It has brought the hope of immortality stored in symbols that, when encoded, hold messages that can convey to the reader what the writer intended to say when writing. After all, we write for others, so that the writing can be read; not for ourselves.

> Immortality is what nature has effortlessly and without anyone's assistance, and immortality is therefore what mortals must try to achieve if they want to survive the world they were born in, if they want to survive the things that surround them and in whose company they were admitted for a short time. The connection between history and nature, therefore, is by no means an opposition. History welcomes in its memory those mortals who, through deeds and words, proved themselves worthy of nature, and their eternal fame means that they, despite their mortality, can remain in the company of things that last forever (ARENDT, 2007, p. 78).

However, until mastering writing, human beings made use of memory as a means of storing and transmitting their teachings, because "in societies without writing, lasting production is based almost entirely on human memory associated with the handling of language" (LÉVY, 1990, p. 101). Memory is the tool that humanity had at that time to ensure everything that had already been created and that needed to be passed on. In this sense, "the function of the mind is to understand what has happened", and this understanding, according to Hegel, is the way of reconciling man with reality (ARENDT, 2007, p. 34)

We reiterate and alert to the dialectical meaning of language, based on Bicudo (1983), when we consider that there is always more meaning in what is uttered than what was expressed by language, "meaning that not everything was felt and articulated is expressed and, paradoxically, there are fewer meanings than those that populate the words traditionally uttered throughout history" (BICUDO, 1983, p.77). This is because language, even orally, "requires analysis and interpretation so that the meanings are articulated and the understood is exposed" (SOUZA; PAULO, 2020, p. 293).

Thus, there is a capital importance given to auditing. In a predominantly oral primary society, those who had the gift of listening and keeping the teachings had intelligence, that is, intelligence was often linked to memory. An interesting event that corroborates the saying is the fact that "in times before writing, inspired people heard voices (Joana d'Arc was illiterate) long before they had visions, because the ear was the usual channel of information" (LÉVY, 1990, p. 101).

The importance of orality can also be exemplified by the dissemination of knowledge throughout ancient Greek history from what we know about Socrates. During this period, oral and written language were very present in Greek society. However, Socrates bets on orality for the transmission of his teachings, so much so that everything we know about his teachings is the result of his disciples' writing who acquired them through oral language (CHASSOT, 2004).

When dealing with memory, we look for the teachings of Lévy (1990, p. 101) that go back to Greek mythology to introduce us to "Mnémosyne (Memory)", represented in mythology in a prominent place among the gods, since "she was daughter of Uranus and Gaia (Heaven and Earth)". This position shows the importance of memory in a period devoid of writing.

However, memory is not always reliable and over time it can change facts. Mechanisms had to be created so that the teachings could resist the wrath of time: "this is because memory, which is just one of the modes of thought, although one of the most important, is impotent outside a pre-established frame of reference" (ARENDT, 2007, p. 31)

Indeed, the way created to solve the problem was to understand that "the primary oral man's memory is totally incarnated in the songs, dances, gestures of countless technical arts" (LÉVY, 1990, p. 108). With this, "nothing that is not observed, executed, repeated, imitated, acted upon by the subjects themselves, or by the community as a whole, is transmitted" (LÉVY, 1990, p. 108).

With Lévy (1990), we clarify our position on the understanding of the coexistence of orality, writing, and information technology in the current world and how they have been happening over time. With Chassot (2004), we point out that this evolutionary movement happened in accordance with the historical-scientific conditions of each time, as we understand that "the technology involved in the construction of a polished stone knife was as challenging as the intelligence put to use in the development of a supercomputer at the end of the 20th century" (CHASSOT, 2004, p. 9), the evolution of communication was also just as challenging.

> Let it be very clear: the succession of orality, writing, and information technology, as fundamental modes of social management of knowledge, is not verified by simple replacement, but rather through the complexification and displacement of the centers of gravity. Oral knowledge and types of knowledge based on writing exist and will undoubtedly continue to exist forever (LÉVY, 1990, p. 12).

For example, today we can observe the importance of orality becoming present in politicized speeches, in which a good orator manages to dominate the masses. It is interesting to observe the metamorphosis that politicized discourses have also had over time, moving from a merely oral idea, such as the discourses in the polis given by Socrates or even the Sophists, to oral, written, or videotaped discourses that circulate at the speed of a click. These are also ways in which this metamorphosis is visible through the changes that the communication society has undergone throughout history.

Writing, one of the most important creations of our culture, is credited to the peoples of Mesopotamia, more specifically to the Sumerians, around the third millennium BC.: "to account for the assets of the State, it was created, around 3500 BC., a wedge-shaped system of signs, with different inclinations. This system was called *cuneiform* writing" (CHASSOT, 2004, p. 26 – emphasis added).

The evolution of writing brought the interpretive exercise to man. According to Lévy (1990), with the admission of writing, and mainly, "when ambiguous messages out of context began to circulate, the attribution of meaning occupies a central place in the communication process" (LÉVY, 1990, p. 114, emphasis in the author), and thus the need for interpretation begins to circulate with them.

When we consider the human being as an entity belonging to a society, "what happens to us and has meaning for us is finite, as our understanding is determined by customs and traditions of our experience of being in the world and the possibilities of interpretation" (SOUZA; PAULO, 2020, p. 289). This only makes sense if we consider being as immersed in the historical facticity of which we are

part, moved by lived experiences, tradition and representation of what we are over time, projected through our historicity.

> Thus, the perceived/meaning/articulated/pronounced tension finds a point of relaxation in the search for an encounter with the other, given in terms of understanding and communicating what is being expressed. It is at this point that the hermeneutic work and the search for an encounter with the other find their space, becoming crucial for the understanding of oneself, the other, and the world (BICUDO, 1983, p.77).

Hermeneutics, then, becomes part of the life of a society used to telling stories and transmitting its teachings through conversation circles, for example. Therefore, with the exercise of interpretation, "the world presents itself, from then on, as a great text to decipher" (LÉVY, 1990, p. 114).

It is worth remembering that the hermeneutics assumed in this text takes the contours of the theory of understanding, which has in interpretation ways of seeking the truth, in the sense of the essence that is immersed in a text waiting for the reader (BATISTA, 2016). Seen in this light, it is assumed as stated by Gadamer (2004), Heidegger (1978) and ratified by Souza and Paulo (2020) not as an interpretive instrument, but as a philosophical stance.

The shift from a predominantly oral society, spread through memory and hearing, to a written society, now turns to another sense, vision. Hearing, which used to be so much in demand, is no longer so necessary, as the audition-memory-time trio no longer goes together. Its elements are disconnected so that time is no longer as fearful as it once was. Vision comes into action!

With Lévy (1990), we clarify our position on the understanding of the coexistence of orality, writing, and information technology in the current world and how they have been happening over time.

> Finally, literature, through which primary orality disappeared, perhaps today, paradoxically, has the vocation of rediscovering the active force and magic of the word, the efficiency it had when words were not yet small flat labels on things or ideas, but powers linked to a certain living presence, a certain breath... (LÉVY, 1990, p. 109).

The act of seeing is questioned by epistemologists who place vision as the sense most used by science, but what matters is what the verb 'seeing' reveals to us in the action of interpreting. For Chalmers (1993), "the functioning of the eye is very similar to that of a camera. A big difference is in the way the final image is recorded" (CHALMERS, 1993, p. 48).

The author shows that the interpretation of something is never the same for two people, as interpretation is loaded with subjectivity. However, for phenomenology, "comprehension is never a subjective behavior towards a given 'object', but towards actual history, and this means, it belongs to the being of what is understood" (GADAMER, 1999, p. 19).

In the phenomenological understanding of the gaze, the scientific determination to classify the eye and the gaze is discarded, as it is not of interest "[...] to identify this gaze only as what is seen with the eyes (as an organ of the senses), but the gaze that is already understanding" (ROSA; SEIDEL, 2014, p. 346, emphasis added). Therefore, "[...] the meeting between the gaze and the gazed upon takes place on the frontier of interest. The interest is in the importance. We

are interested in what matters to us, because it tells us something, because it awakens us to wanting things [...]" (BARRETO; NASCIMENTO, 2014, p. 272).

However, the discussion of what is and what is not subjective is much more complex than the simple fact that what we understand is taken for granted. At the same time that we consider understanding as a subjective act, we make a reservation, using Gadamer (1999), who signals the hermeneutic bias away from the restriction of our point of view as a single truth, since the interpretation is loaded with the historical and cultural multiplicity that exists in everything we propose to interpret and in ourselves, which he called historicity. Thus, "understanding must be deemed as part of the occurrence of meaning, in which the meaning of every statement is formulated and realized" (GADAMER, 1999, p. 263).

What Gadamer (1999) means can be interpreted from the example of a judge's decision, before a defendant, who despite having the subjectivity of their case interpretation being judged cannot escape what is determined by the law, so that the non-admission of such law will directly interfere with the case finalization. That is, despite having a personal interpretation of the case, he is tied to something greater (the current legislation) and, therefore, cannot make his truth prevail, but the mediation of both.

Seen from this angle, "understanding is openness, since to understand it is necessary to be willing to do so. Hermeneutics, in this sense, does not bring the certainty of a methodology, but the possibility of experiencing it in a community, in a universal way" (MONDINI; MOCROSKY; BICUDO, 2017, p. 5).

Detoni (2014), in the chapter "Cyberspace: possibilities that opens up to the world of education", presents the possible contributions of Martin Heidegger of being-present at a distance, seeking Heidegger's contributions to the understanding of how the pedagogical practice takes place in Mathematics Education: "For Heidegger, the being does not understand the world: it is its own understanding, that is, understanding is an existential foundation of being" (DETONI, 2014, p. 104, emphasis added). The author presents the understanding as a way to differentiate that being together in presence "is not a mere occupational condition" (BICUDO, 2014, p. 23).

From the above, we assume the hermeneutics as Gadamer (1999), considering that

> the way we experience each other, how we experience historical traditions, the natural occurrences of our existence and our world, is what forms a truly hermeneutic universe, in which we are not closed as between insurmountable barriers, but to which we are open (GADAMER, 1999, p. 35).

After assuming writing and interpretation as necessary for the solidification of what is culturally produced, we entered a new phase, since we would no longer need to be slaves to memory, which, in the short term, would dissolve if it were not passed on to a new generation. Writing is now "a way to indefinitely extend the biological working memory" (LÉVY, 1990, p. 116). It is no longer necessary to have the presence of the speaker accompanying what is wanted to be expressed. It is the first step of many changes that were yet to come.

Thus, "as we move from ideography to the alphabet and from calligraphy to the press, time becomes increasingly more linear, and increasingly more historical"

(LÉVY, 1990, p. 120). We do not want to say here that memory is no longer necessary or that it has fallen into disuse, but as we said before, with the advent of writing and its linearity, everything has become more practical.

FROM WRITING TO PRESS: THE REALITY OF THE CIRCULATION OF KNOWLEDGE ON A LARGE SCALE

In the wake of writing comes the press and with it the multiplication and dissemination of knowledge. Now, "knowledge is no longer just what serves day after day, what feeds me and makes me a human being who is a member of a community. It is an object susceptible of analysis and examination" (LÉVY, 1990, p. 121). Now we can save it; use it whenever we want to. The plasticity that knowledge acquires with writing gives us something we have always dreamed of: immortality! Yes, because now we can always be remembered and consulted from reading a book. History gains an unparalleled tool in its favor. It is that "history [...] is built in spaces established by the dialogues alive in time-space that give meaning to human existence" (MENDES; FARIAS, 2014, p. 9-10).

Time is no longer the same either. The need for rapid dissemination of knowledge, which had to be transmitted to others orally so that it would not fade under the pressure of time, can now be cultivated to last, to persist for eternity. In this case, time loses its function as a great organizer of functions and becomes a spectator, who just follows everything like someone who watches everything go by without being able to interfere.

The need to interpret brought with it the action of association, because "the elementary operation of interpretive activity is association" (LÉVY, 1990, p. 91-92). The author mentions a basic function of interpretation, as "giving meaning to any text corresponds to relating to it, to connecting it with other texts" (LÉVY, 1990, p. 92). On this subject, Lévy (1990) brings to light what is inherent to any writer, namely: the search for other texts that corroborate or refute what he wrote. It is the search for interpretative company in order to make part of the read texts his own, as well as to give to all the read texts what he is creating, because writing is a creation. Writing enables us to share with the world something that has emerged from the particular of our minds to the general, to venture the world.

Interpretation is the path to understanding. However, interpreting refers us to the subjective character of words, which can be observed by the fact that they (words) are imperfect representations of the world of ideas. Words are the presentation of ideas in the material world. Thus, we cannot forget that "the text, being expressed through written language, carries a polysemy of meanings of the words they say in a given context and, in order for it to be open to dialogue, it is necessary to understand what the words say" (SOUZA; PAULO, 2020, p. 295).

However, this is a process and, as such, it does not happen overnight. Gradually, technology after technology, human beings took over and assimilated writing and reading as part of themselves, to build an almost dependent relationship with writing: "when social groups spread a new communication device, the whole balance of representations and images is transformed" (LÉVY, 1990, p. 19). In this light, writing has changed society.

Such dependence is described by Lévy (1990), for whom language and technique contribute to producing and modulating time. Time is no longer the absolute controller, it is now controlled. Thus,

> whether engraved in the minds by the mnemonic process, in bronze or clay by the art of the blacksmith or potter, in the scribe's papyrus or the copyist's parchment, the inscriptions of every order, and in the first place, writing itself, performs the role of anchors of irreversibility (LÉVY, 1990, p. 99).

This irreversibility took place from the moment when man began retaining information no longer only in memory, but in bones, cave walls, papyrus, among others. From then on, history took another turn. Knowledge can be stored. Writing creates the cumulative function of knowledge, later challenged by Thomas Kuhn against inductivist theories. For them,

> scientific knowledge grows continuously as more and more varied observations are made, enabling the formation of new concepts, the refinement of old concepts, and the discovery of new legal relationships between them (CHALMERS, 1993, p. 135).

In contrast to the linearity of scientific knowledge construction, Chalmers (1993) states that Thomas Kuhn (1922-1996) presents a refutative proposal, based on the breaking of paradigms due to anomalies that science constructs. Thus, from the specific point of view of Thomas Kuhn, this is a mistake for ignoring the role played by paradigms in guiding observation and experience (CHALMERS, 1993).

With the advent of the press, a new order is established. Now the "press profoundly transforms the mode of transmission of texts" (LÉVY, 1990, p. 122), and this also redefines interpretation. Its emergence is so important that it greatly transforms the life of 15th century Western society, shifting the centers of knowledge production, previously restricted to copyist monks, through manuscripts, to press owners who spread knowledge through copies (CHASSOT, 2004).

With the accuracy and multiplication of the works, the amount of texts in circulation increases exponentially and the presence of a master interpreting and transmitting to their students as it was done in the oral system is no longer necessary: "the recipient becomes an isolated individual who reads in silence" (LÉVY, 1990, p. 122). In this way, "the past flows back to its antiquity, thus lightening the weight of the present, relieving the burden of memory" (LÉVY, 1990, p. 124). It is up to the future to reap the fruits of progress.

Seen from this angle, the progression of writing and the press has brought a Pandora's box of new possibilities. With it, cartography, astronomy, medicine, and biology, among others, can be freed from the imprecision of the copies. Lévy (1990) presents the example of a book in which the author's need to produce a figure depends on the artist's precision (in the case of the example, the author himself), but even if he was an excellent draftsman, it was unlikely that the copyist was also. He reveals that in two or three copies the image would no longer bear any resemblance to the original. With the press, that was no longer a problem. It became possible to reproduce texts through printed books that counted with precision from the press and engravers (CHASSOT, 2004).

With the Theory of Relativity developed by Einstein, the new relationship between time and space is also redefined. Time and space are a continuum that

intertwine and work together, strengthening the concept of space-time (MIARKA, 2008): "history, therefore, is built in spaces established by living-dialogues in time-space that give meaning to human existence" (MENDES; FARIAS, 2014, p. 10).

The press also brought progress along with it. The reading experience of a minority, with rare copies, gives space to groups of scholars who analyze, discuss, corroborate, and refute, in other words, "the press makes it possible to easily compare the different lessons of the text. It makes translations and dictionaries available to the scholar. Chronologies begin to unify" (LÉVY, 1990, p. 124).

Another notable point of progress arising with the emergence of the press is its contribution to the "emergence of science, religion, culture, and politics" (RIBEIRO; CHAGAS; PINTO, 2007, p. 30), because this new technology that emerged in the fifteenth century would be responsible for triggering a revolution in communication, considerably altering the flow of information that circulated in the Middle Ages.

The press also changes the way education is acknowledged. With the change in the way knowledge was disseminated, "the point of view that the main purpose of school education was to transmit information, one-to-one, or one-to-few, in a face-to-face context begins to erode" (RIBEIRO; CHAGAS; PINTO, 2007, p.31). The transmission from one to a million becomes possible, removing the dominant hegemony of knowledge from the monasteries.

The contribution to science can be seen in the following excerpt:

> Thanks to the press, Kepler and Tycho Brahé were able to make use of collections of ancient or modern observations, which were accurate and available, as well as precise numerical tables. Without the possibility of accurately comparing series of numbers, without uniform and detailed geographic charts of the sky, astronomy and cosmology would never have known the revolution that, according to Alexandre Koyré's expression, made European culture pass "from the closed world to the infinite universe" (LÉVY, 1990, p. 125).

Even with all the technology that circulated in the period of the press invention, the population of the time still had no idea of the revolution that information technology would bring to communication, that is, a revolution with such an impact on the dissemination of knowledge would only be repeated with the arrival of information technology. In the information technology age, cyberculture presents itself with a "new way of positioning itself in the space of dialogue established by social groups given the multiple ways of communicating" (MENDES; FARIAS, 2014, p. 10).

Mendes and Farias (2014) also report to Lévy, who presents something that so far had not been questioned. The importance given to writing and its dissemination by the press imposed the idea of self-sufficiency in the texts. However, it is worth remembering that "communication builds and extends itself through the interconnection of messages among themselves, through the permanent link with the virtual communities in permanent creation, which give it varied meanings in a renewal that does not cease". (MENDES; FARIAS, 2014, p. 11).

INTELLIGENCE TECHNOLOGIES AS A NEW WAY OF UNDERSTANDING AND PRODUCING KNOWLEDGE

By making an analysis of the path that knowledge took in the face of the various technologies, relying on each one of them to be able to "evolve", it gives the impression that everything was very linear and that it happened simply and quickly. However, this process was gradual, not linear, going step by step until the advent of information technology, which heralded great change.

To describe what is understood in the texts that deal with this subject, we will use the phenomenological outlook as a way to explain the hermeneutics of significant points that present the way the relationship between humans and media has been built (COELHO; BICUDO, 2014). We will also use this approach to explain the construction of knowledge, in order to support this work, which will use the technological environment as a means of propagating information and building knowledge, an object of study of many authors and our study object as well. Thus,

> the attitude undertaken in relation to the research conducted is characterized by a philosophical analysis of what is given in cyberspace, going in the direction of: a hermeneutic of significant texts that speak of the reality investigated and of the way human beings are with the computer and the media, encompassing the reflective understanding of the reality experienced in this space (BICUDO, 2014, p. 15).

Our study is based on the literature, of a hermeneutic phenomenological philosophical nature, with the intention of contributing to discussions that show necessary changes in the educational field, promoted by the ways human beings think, act, and communicate nowadays. Thus, it is addressed to pedagogical action as openings, that is, possibilities for teaching and learning today, culminating with the idea of the genuineness of each human being in being together with other humans and products of humanity.

Continuous metamorphosis, reported by Lévy (1990), shows the view of constant change and adaptation that humans have experienced over time with the various technologies that contribute to knowledge. Since the advent of orality as the main form of propagating the knowledge produced until today, several information technologies have contributed to this change. The emergence of information technology is one of them.

It is worth pointing out that the phenomenon of humans-with-machines is a unique experience that has been experienced by human beings from the moment that the use of such technologies was put to use in favor of knowledge construction. Bicudo (2014) states that

> computing with machines is a peculiar phenomenon that has made itself present in the world-life today and that seeking to understand it enables us to know more about ourselves, since the presence of computing has triggered, for us humans, unique experiences (BICUDO, 2014, p. 24).

In this text we have been emphasizing not only the fact that technologies and humans are in the world, but a technological way of being with the other, of being-together, of remaining pre-sentient. This means that pre-sentience carries the past, transcends it, and addresses itself to the future, marking a mode of "being originally in the world [...] to realize the world and leave it open for new

realization" (DETONI, 2014, p. 98). Assumed in this way, "the presence [...] projects itself into its being-power [...]" and thus, "it is always already 'being'" (GADAMER, 1999, p. 399). It is projecting oneself in such a way that the thrown is presented by already being present, since it is a constituent part of the world.

The understanding of presence puts us on the path to discuss it in the context of media as an extension of what we expose. The media are so present to us that they are in the world being used as a means to knowledge. We consider not only the need for construction, but for dissemination and storage; dissemination because the speed with which the release spreads, disseminates it, in a web of knowledge, comprised of a tangle of connections, in which the supposed chaos creates life and shows itself to the eyes of the one who interacts; storage, because it is a virtual intelligence, created for a machine that registers and stores everything we define as important.

Thus, the presence to which we refer is the one that opens paths, that comes before the beginning, that opens doors for the implementation of information technology as a source of knowledge construction, since before "information technology was understood as the art of automating calculations and not as an intellectual technology". (LÉVY, 1990, p.66). Lévy (1990) also reveals to us that, despite the imposing and rapid arrival of computer science, for a long-time computer scientists considered themselves to be only machine experts, which contributed to the implementation of information technology as a source of knowledge.

However, as time went by, this idea became unraveled, so that "each one of the great innovations in information technology has opened the possibility of new relationships between men and computers: increasingly intuitive programming codes, real-time communication, networks... (LÉVY, 1990, p. 69). Finally, such innovations have taken on the role of bringing humans and machines together to such an extent that Coelho and Bicudo (2014) use the term humans-with-media, to show the closeness, to the point that we can say that humans and machines become one during interaction.

The intensity of this interaction can be explained from the facilities and functions that have been developed and assigned to the computer. The possibility of talking to people in other countries, paying bills, shopping, having fun, and a multitude of other benefits have made this relationship so strongly established that today it is hard to imagine daily life without the use of computers. Lévy (1990) describes that

> Most contemporary software plays the role of an intellectual technology: they reorganize little or much of their users' view of the world and modify their mental reflexes. Computer networks change the communication and decision circuits of organizations. As computerization advances, some functions are eliminated, new forms of knowledge appear, the cognitive ecology is transformed (LÉVY, 1990, p. 69).

Bicudo (2014) refers to the term machine computing with a unique, lived experience as being and machine interact. This interaction, when first given, reveals a parallel world that represents actions, experience that leads one to navigate through this sea of new information and, as a consequence of everything that attracts attention, knowledge is born. The author understands that "computing with machines is a peculiar phenomenon that is present in the

lifeworld today and that seeking to understand them enables us to know more about ourselves" (BICUDO, 2014, p. 24).

The interaction between man-machine-world is so intense that Lévy (1990) speaks of a mutation of the human species, of collective intelligence, in a planetary scenario of intercommunication and mutual knowledge exchange. This is because "connected to the networks, people exchange messages, dialogue, get involved in professional relationships, fall in love, practice illicit actions, participate in projects of all kinds" (BAIER; BICUDO, 2013, p. 421). Thus, knowledge also mutates, for "knowledge is not reduced to scientific knowledge, but is related to the experiences organized by human beings when engaging in learning activities" (BAIER; BICUDO, 2013, p. 422). This mutation of the human species to which the authors refer to, leads us to the various ways of dealing with this new form of knowledge construction.

Barreto and Nascimento (2014) present a particularity, which can be seen as a form of mutation of the human species in the search to adapt to new ways of acquiring knowledge. The authors present the case of digital native children, revealing that, unlike past generations, this new generation can manipulate digital media with such dexterity that it is astonishing. This amazement turns to curiosity when it is observed that such skill is used for knowledge production this new generation that is emerging.

Nowadays, the evolution of this term has also followed the changes that have been evidenced with the implementation of *Web 2.0*. The new generation, now identified by Marc Prensky as the digitally savvy generation, has reconfigured the previous forms of communication through the high speed of information exchange, in a scenario that breaks with the traditional molds of presentness in time and space.

In this same present time, we have observed the ways in which being-with-the-other is done through the informational meshes of the internet that also open paths for pedagogical action in the act of teaching and learning through the computer screen, *smartphone*, or other technological object capable of bridging the gap between being and cyberspace. This form of communication has enabled the diversification of forms of teaching and learning in the present time and has presented the two faces of the same reality that differs as it is shown to different audiences.

While it generates possibilities of interaction, transmission of information, and sharing of experiences and knowledge, it also points to a face marked by digital exclusion that has been accentuated by the ways of living in the 21st century. Inclusion policies are only effective if there is access, and this access has been held back by the mismatches between teacher-student-digital technologies, since this digitally savvy generation also includes teachers who lack the affinity and dexterity to deal with the contemporary technologies that have become a pre-sense in the classroom; or students who do not have the financial conditions to have access to technological objects and, consequently, to the digital medium.

A COMPREHENSIVE OVERVIEW OF THE STUDY

The presence was considered in this text to shed light on digital technologies as possibilities, therefore, as an opening for understanding the world and how we

come to be in the world. The intentionality of the choice is due to being present, so that it becomes part of us, but also the term 'pre', in the sense of that which precedes, which comes before, opening the way and, thus, remaining.

The need to tell facts, to expose what the eyes have seen, to leave others one's legacy, to make oneself understood, has made writing one of the instruments used by man to show the world a part of oneself that is often unknown. It is also with it that humanity overlaps with time, leaving future generations the possibility to dive into the past and reconstitute what was once lived based on memories, no longer to those stored in the mind, but to those transcribed and encoded in symbols that have enabled us to evolve from an oral to a written society.

It is beneficial to return to the point where writing brought with it what would later become the core of hermeneutics. With the circulation of information without the presence of the interlocutor, the need for interpretation comes into play and, thus, we come to understand the information from the interpretative capacity. We emphasize that the presence of writing does not leave at the margins of history the importance and meaning of memory and the teachings passed verbally. They now coexist in the same space and are present according to the need to use each one.

The press has also played an important role in the history and evolution of knowledge production. With the press, the relations between present, past, and future are revised, because from the reproduction of texts previously kept in rare copies they become "available to everyone" and, in this way, "everyone" has access to them and can interpret them. Thus, forgetfulness loses its function, and the fear of forgetfulness loses its value. This was the beginning of knowledge democratization.

Education has also adhered to this new way of being in the world, by not being on the fringes of it. We now see the possibility of a class without the physical presence of the teacher. Who would have thought, a few decades ago, that classes could be taught without the teacher there, in the same physical environment? "What an insult", the more traditionalists would say; "It would be wonderful", the more contemporary ones would say. The fact is that with the advent of the Internet, education has also undergone a revolution and being a teacher has also changed. From that point on, a new language, new methodologies, new forms of teacher-student interaction, new paths that point to distance as a possibility for presence stand out, given the horizons that are pointed out with the digital technologies.

We believe that the digital technologies in the school environment can be transformative of knowledge through diverse forms of communication, teaching, and positioning of the "self" as a way for everyone to take responsibility for their own learning. After all,

> Learning is more difficult than teaching; thus, only those who can truly learn - and only to the extent that they can - can truly teach. The true teacher differentiates himself from the student only because he can learn better and wants to learn more authentically. In all teaching, it is the teacher who learns the most. [...] The most difficult thing to learn is to take in what there is to know and that we have always known, effectively and to the core. Such learning, the only learning to which we indulge here, requires that we dwell permanently on what is apparently closest, for example, on the question "what is a thing?» We constantly ask only the same obvious uselessness from

> a utilitarian point of view: what is a thing, what is a tool, what is man, what is the work of art, what is the state, what is the world (HEIDEGGER, 1987, p. 80).

This text aimed at the historicity of technology as a possibility to recognize the importance of the lived experiences for the continuous livable construction of knowledge. In the movement of this study, as aspects were being revealed, new questions were arising, new demands for learning-teaching, of which we highlight two and address them to our peers to weave a network of understandings that address teaching in contemporary times: what is this knowledge that is being produced by the new generations? How can the school participate in this constitutive movement of knowledge, being the driving force for the critical reason of what was, what is, and what could be?

AS TECNOLOGIAS COMO PRÉ-SENÇA: ABERTURAS PARA O ENSINAR E PARA O APRENDER

RESUMO

Nesse texto, discutimos o conhecimento humano produzido em um cenário em que as tecnologias digitais estão presentes. Para tematizar, partimos de uma discussão sobre tecnologia em diferentes contextos, evidenciando que o modo como vem sendo produzida, em cada época, interfere e modifica as formas de o ser humano ser no mundo. O estudo, pautado na literatura, mais especificamente a de cunho filosófico fenomenológico, intenciona contribuir com discussões que evidenciam alterações necessárias no âmbito educacional, promovidas pelos modos de o ser humano pensar, agir e comunicar-se na atualidade. Assim, é endereçado à ação pedagógica como aberturas, ou seja, possibilidades para o ensinar e o aprender na atualidade, culminando com a ideia da genuinidade de cada ser humano no estar junto com os outros humanos e produtos da humanidade.

PALAVRAS-CHAVE: Conhecimento. Educação. Hermenêutica. Inteligência Coletiva.

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