

The social representation of technology for the teaching work in Amazon*

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Abstract

The article is the result of a research that aimed to analyze the social representation of technology, between trainers and course participants, at the Educational Technology Center in Manaus / State of Amazonas, its implications for teacher training and in the implementation processes of policies for the insertion of technology in teaching work in the Amazon. Some reflections on the relationship between education, technology, training, and teaching work are highlighted, considering its importance in the educational *praxis* of educators in the region. Nevertheless, it discusses the role of policies for incorporating technology into teaching and its implications for teacher training. In this sense, an empirical study based on the Theory of Social Representation was carried out as a theoretical-methodological axis, its mechanisms of formation and structuring to apprehend the materiality and the meaning of the term technology. For this purpose, in the data collection, 70 teachers participating in the process of implanting the Municipal Technology Centers (MTC's) in the State of Amazonas were interviewed and the following instruments and techniques were used: systematic observation, registration and semi-structured interview, free association techniques, content analysis, in addition to the epistemological assumptions of Bourdieu's *habitus* theory. The results obtained with the development of the research indicate the coexistence of two meanings of the term: technology as a product (material medium) and as a process (management strategies, interactions, and didactic mediations). Among the implications of these representations in teacher training, it stands out: the modification and apprehension of symbolic productions around the object technology, although its senses are disconnected from the specificities of the Amazonian region.

Keywords

Teaching work – Technology – Social representation.

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Introduction

Technological advances are increasingly penetrating the structure of contemporary society. In addition to the simple introduction of instruments and techniques in society, technological developments show changes in the bases of economic, political, social and cultural order. In this sense, there is a kind of reconfiguration in the social relations experienced by the subjects in contemporary times through the resizing of some categories, such as: work, time, space, memory, history, communication, language, etc. Many scholars or scientists in the field of social sciences, in an attempt to understand and explain existing social problems, mistakenly use the term technology as a synonym for novelty, reinforcing the theoretical-scientific dichotomy between technology/society and subject-object.

This can perhaps be explained because creation and technological development are linked to the production model in today's society, the way of production has as its basic characteristic production based on the diversity of products. In this sense, Vieira Pinto (2005) asserts that, to the so-called children of the technique, there is a kind of admiration and enchantment due to the phenomenon called *commodity fetish*. This is because these products populate the physical and social reality with greater intensity, and the diversity of artificial objects within reach is increasing. Given this fact, it is understood that the historical process of conceptual construction of the term technology is directly linked not only to the current production model but, above all, the transformations in the productive structure of the world of work regulate and/or are part of a macro movement where formal education and especially the school, as a space for training qualified workers, are directly affected.

Considering the above, it is possible to observe, in the last decades, the guidelines prescribed in a hegemonic pedagogical project for developing countries that have brought the fields of Communication and Education closer together through the links between education and technology. In this sense, research on teacher training and work has generally revealed that there is a certain acceptance on the part of teachers to the process of incorporating information and communication technologies (TIC), to work in the classroom, but in a specific way, there is no mediation in the dialogical communication process that favors critical dialogue with digital media. This is because it is stated that most of these professionals prioritize the use of ready-made media, confusing a resource with a vehicle, ignoring the potential of using the media for interlocution (ALMEIDA; LOBATO; GHAZIRI, 2011, p. 40).

In this sense, discussions about the impacts of the so-called information and communication technologies (TIC) in the field of formal education have been marked by the existence of two apparently antagonistic positions, namely: the first position is defended by those who see technology as an element capable of solving all the problems of education, that is, they attribute to technology the therapeutic power of educational ills and place it at the center of the teaching-learning process; the second brings, in the essence of their speech, total aversion to any form of technology and accuses them of being responsible for the murder of the real world and the liquidation of socially constructed references and values.

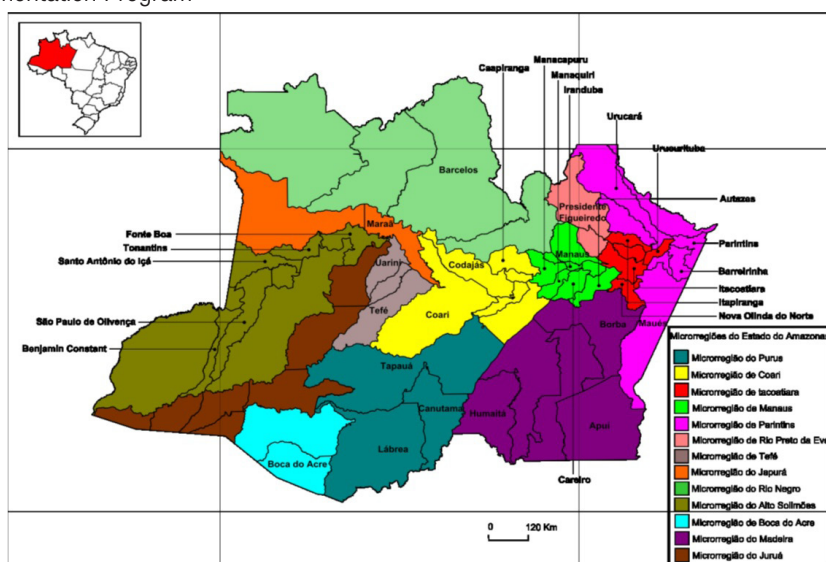
In this scenario, the populations in the Amazonian territories still face the reflexes of the most diverse forms of contradiction in the production of their existences, namely: wealth x poverty; inclusion x exclusion; progress x delay; singularities x pluralities, etc. Among the multiple facets that represent the totality of the Amazon, we chose to cut out

the apprehension of social representations by understanding them as an important element to be considered to enable the understanding of internal evolution and the processes of social transformation and adaptation, highlighting their importance in educational *praxis* of educators from the State of Amazonas, and their implications for the recognition and affirmation of policies for incorporating technology into teaching work in the Amazon. In this sense, this study aims to analyze the social representation of technology among course teachers and trainers at the Educational Technology Center (ETC), during the process of implementing the 32 Municipal Technology Centers (MTC's) in the countryside of the State.

Theoretical-methodological path

According to Figure 1, it is possible to observe that the region known as the Brazilian Amazon or the Legal Amazon encompasses nine Brazilian states belonging to the Amazon Basin. The State of Amazonas is one of the federations belonging to that region. Geographically, it is subdivided into four mesoregions and thirteen microregions where its 62 municipalities are located. Of these 62 municipalities in the State of Amazonas, 34 joined the Seed/E-Proinfo Training Program, whose objective is to enable, through the training of multiplier teachers, the process of implementing MTC's in municipalities in the State of Amazonas. In view of the above, and in order to better understand the reproduction process of the social representation and materiality of the technology object among teachers, it became necessary to take ETC/Manaus's role in the training of teachers to incorporate technology into teaching work as a starting point.

Figure 1- Map with the Microregions of the Municipalities of the State of Amazonas that joined the MTC's Implementation Program



Source: BRASIL, Manaus, 20112.

2- Map adapted by the Master Professor in Geography, Richarlison Costa e Silva, for the purposes of the research "A Representação Social de Tecnologia".

In this sense, in view of the need to delimit the physical and social space that would serve as a *locus* of support for the empirical investigation of the object of study, the Educational Technology Center-ETC/Manaus was chosen. For this choice, three aspects were taken into account: 1) the history and the role that the Center of Technology has played for fifteen years in the Continuing Education of Teachers with a view to incorporating technology into teaching work in the Municipality of Manaus; 2) the partnership between the city halls with Seed/E-Proinfo that made possible, through the process of participation in media training in education, the significant presence of a large number of teachers from various municipalities in the countryside of the State that joined the implementation program the Municipal Technology Centers (MTC's); and finally, 3) the time limit and the structural conditions for the development of the research. From the universe of 97 E-Proinfo student teachers, divided into two classes of 45 teachers, 7 teachers who are ETC-Manaus trainers, we managed to compose a sample of 70 subjects who were willing to collaborate participating in the research.

To apprehend the social representation of technology, between trainers and course participants, at the Educational Technology Center-ETC Manaus/AM, in addition to the help of the *Evoc software*, of the epistemological assumptions of Bourdieu's habitat theory, of the documentary analysis that was based on the content of the legislation (ordinances, decrees, resolutions, LDBEN, Federal Constitution), three techniques were used for data collection: the Free Association Technique (FAT), the sociocultural questionnaire and semi-structured interviews.

The choice of the first technique was intentional, due to the care to avoid contamination by the other contents covered in the demographic socio-cultural questionnaire and the semi-structured interview. The technique of free evocation or test by word association is the oldest of the projective tests and aims to locate an individual's blocking and repression zones. Bardin (2011) states that this technique allows composing and observing some symbolic elements organized around the object studied and how they are expressed, conceptualized and, consequently, spontaneously shared by the group members. Its application is simple and consists of asking the subjects to associate, freely and quickly, other words (responses) or words induced from an inducing term (stimulus). In a relaxed and spontaneous way, it is possible to access the implicit and latent contents that are often hidden in the discursive productions, in addition to obtaining the semantic content quickly and objectively.

To perform the FAT, a kind of prior simulation was carried out with the teachers using the word "sogra" [*mother-in-law*] as an inducing term, then they were instructed to comply with the following steps. The choice of the term mother-in-law was intentional because it was not related to the object of the research and because of the possibility of allowing the group to relax and a faster approach between researcher and subjects.

The second technique was the questionnaire, which made it possible to draw a sociocultural profile of the researched group through direct observation of aspects related to gender, age, academic background, working conditions, among others. Considering not only the size of the universe of 70 subjects but the need to save time to take advantage of contact with the subjects, considering that almost 90% of them came from municipalities

in the countryside of the State, the first two techniques were applied sequentially from the delivery of the two instruments. This made it possible in a single approach to inform the objectives of the research and the orientation of the procedures for the application of the first two techniques.

Finally, the semi-structured interview, the third applied technique consisted of obtaining information from the interviewees about a certain subject through a professional conversation. This technique is widely used in data collection in research in the area of social sciences because it helps in the treatment of the investigated problem. In order to compose a group as diverse as possible, the choice of seventy teachers who agreed to participate in this stage of the research followed some previously defined criteria, namely: age, location, gender, academic background, length of service, area of expertise.

Therefore, this research proposed an investigation focused on the study of the social representation of technology in ETC/Manaus in order to answer the following question: What is the social representation of technology among teachers (trainers/course participants) in ETC/Manaus and its implications for teacher training? To answer it, social representation was chosen as a theoretical-methodological axis using its mechanisms of formation and structuring to apprehend the representative constructions around the term technology.

ETC/Manaus and the incorporation of technology to teaching work

On the world stage, the recommendations suggested by international organizations such as the World Bank (BM), World Trade Organization (WTO), the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the Economic Commission for Latin America and the Caribbean (ECLAC), as these agencies influence teacher training policies. Among such organizations, the BM is the agency that establishes recommendations and conditionalities, related to higher education, a space for teacher training (BARRETO, 2004).

Roughly speaking, technological and economic transformations together with global pressures that translate into a flood of guidelines by international organizations, have directly affected the means and relations of production. By extension, the educational field has suffered and still suffer the effects of these demands imposed by the job market. The contradictions produced in the engendering of the relations of the capitalist society reinforce the idea that the Informatics society presupposes the configuration of a new power: the power of information. Information becomes the main input in the current structure of capitalist society. In this context, Barreto (2009) states that the recontextualization of TIC can be dimensioned by the formulations of global organizations addressed to national states, especially when peripheral.

These recommendations, together with neoliberal policies, strengthened the frequent use of some expressions such as: consumers, customers, product, quality, competence(s). Such expressions were coined based on the guidelines suggested in these documents, reached the school routine and influenced not only the displacement of education to the service sector but also the dynamics of training processes. "In this regard, the

literature shows that the teacher is forced to submit to the neoliberal logic that leads to an individualized race to better opportunities for success” (CUNHA, 2005, p. 88).

In the national scenario, some aspects that favor the understanding of the relationship between convergence and/or divergence around the political theme of teacher training and technology can be mentioned. It is noteworthy the importance of thinking about the categories: teacher training and teaching work considering that the training spaces are being recreated from the reflexes of changes in the world of work and the discursive materiality of educational policy produced by the incessant metamorphosis of computational devices.

It does not mean to say that technology determines training processes, or teaching conditions and work, but rather, that it is necessary to have a critical understanding about some discourses that sometimes influence the implementation of some actions and practices in the school routine. In that regard, Pimenta; Anastasiou; Cavallet (2003) highlight some important theoretical points and that must be observed in the analysis of some instruments of participatory research that enhance the self-forming process. Among these points are: the information and knowledge society and the mediation of the teacher.

Concerning this subject, these authors discuss the importance of understanding the conceptual difference between information and knowledge so that it is possible to understand how the fabric of the relations between power and knowledge is constituted. They also emphasize that the term Information and Knowledge Society itself has an ideological charge of technical rationality when it is taken by some only as an assumption, without considering the whole process of articulating theoretical, economic and political elements. The understanding and materiality of the term technology, in the context of teacher training policies, serve to implement the hegemonic training project proposal.

It cannot be denied that learning spaces have been resized based on technologies in at least two aspects: the first concerns the physical space of the classroom, which is expanded with the creation of cyberspace; second, that to some extent, the environments and procedures performed by the group of students and teachers are influenced by the possibility of access to virtual learning spaces – libraries, museums, research centers, other schools, etc. – that modify the dynamics of teaching-learning relationships. On the other hand, the organization of teaching work also changes due to the breaking of the barrier of time and space.

According to Cunha (2005), teachers find themselves increasingly involved in a process of intensifying their work that, with computer technologies, extrapolates academic times and invades the private spaces of social coexistence. The difference is not in the use or non-use of technologies, but in the critical understanding of their construction processes, mediations and contradictions. In another aspect, the consolidation of the partnerships between the Secretariat of Distance Education (SEED) and the other secretariats of the States and municipalities, which gave rise to the Educational Technology Centers (ETC's), represented for the State of Amazonas the effective viability of the policy teacher training for the incorporation of technologies in teaching work.

It is known that the Educational Technology Centers (ETC's) was officially instituted on April 01st, 1998, through the Ordinance of MEC (Ministry of Education) no. 522, of

April 09th, 1997. They are, in general, endowed with an infrastructure of information technology and communication with the Internet service provider, which brings together educators and specialists in hardware and software technology. It operates in a decentralized manner, with each State unit having a State and Municipal Coordination. Its professionals act as multipliers and support technicians in information and communication technologies, being responsible for supporting teachers in the planning process, enabling continuing education through the methodology of Interdisciplinary Projects and technical and pedagogical monitoring in municipal and state schools.

The history of the Manaus Educational Technology Center began in 1996 with the implementation of the Projeto Horizonte [*Horizon Project*], under the administration of Mayor Eduardo Braga, who is one of his trips to the city of Belém, in the State of Pará, became aware of it and decided to implement it in the Manaus Municipal Education Network. This pilot project represents the initial milestone for the use of telematics in the Manaus Municipal Education Network. Initially, the project envisaged the implementation of computer labs in ten schools. For this, there was a teacher who taught computer classes, using the Logo Programming Language for all students in such schools.

Although *Logo* Language, used in the project, was inspired by Seymour Papert's educational theory, the way computers are inserted into the school's daily life happened in the most criticized way, in other words, isolated, in a classroom called the computer lab, where the contents taught with this new technology were used in the form of computer-aided instruction linked to the old school curriculum.

In the view of Paper (2008), the computer must be part of the teaching-learning process and, through it, children will be able to access knowledge areas autonomously, allowing the construction of different learning styles and opportunities. This is because the author argues that this is the main characteristic of *Constructionism*, as it allows the process of mental construction in which the subject of learning builds knowledge as they act on the object of knowledge (a thing, an idea or a person) and suffers an action from this object.

When accessing the collection of reports regarding the first training actions of the ETC, it is observed that despite the attempt by teacher educators to understand the existing relationship between Society, Education, and Technology, there was initially a concern to sensitize teachers to the use of the computer as a pedagogical resource and/or educational tool. In this regard, it is evident that in the 1990s, the technical perspective had prevailed for a long time in the educational actions of the Educational Technology Center due to the arrival of computers in schools. Another important angle to be highlighted is that the training took place at ETC, through modular face-to-face meetings, in which the contents taught were restricted to the approach of educational informatics and pointed to the sense of Technology as a pedagogical tool. Finally, in understanding the role of ETC/Manaus in the continuing education of teachers to incorporate TICs in teaching work and the logic that permeates the power structure, which uses technologies as a mechanism of regulation and control. Favorable or not, the time has come when teachers and other education professionals who work with knowledge and information face the challenges imposed on teacher training in/from the perspective of a technological society. Currently, the ETC is

located in the municipality of Manaus in the State of Amazonas and serves the continuing education of teachers to incorporate technology into teaching work.

Results: the social representations of the term technology

Although Moscovici (2003) was inspired by the sociology of symbolic forms and collective representations from Durkheim's studies, the theory of social representations belongs to the field of Social Sciences, more specifically to the area of Social Psychology. And like any theory in the field of social psychology, the theory of social representation is characterized by:

[...] provide instrumental microtheories for the description and prediction of moral behaviors, such as theories of social attitudes, impression formation, attribution of causality and responsibility, social comparison, group interaction, intergroup relations, and relationships. Social Representations. (TAJFEL, 1978 apud CAMARGO, 2005, p. 19).

Jean-Claude Abric (2000) is another theorist who follows the same line as Moscovici. According to the theory developed by him, representation is both the basis of social reality and a means of adaptation and integration to that reality. He takes up the idea of a figurative model created by Moscovici and works on the idea of centrality, which he calls the central core. The author states that the central core is characterized by the following aspects: 1) nature of the represented object; 2) type of relationship with this object; and 3) system of values and social norms that constitute the ideological environment of the moment and the group. The central core assumes two functions: the generating function and the organizing function. The first creates and transforms the meaning of the elements of the representation; the second is the unifying and stabilizing element of representation, called the central core (ABRIC, 2000, p. 31).

Thus, basically, every study of social representations seeks, first, to highlight the elements that constitute it and, in a second moment, to highlight its structure based on the relationships of these elements around its centrality and periphery. This happens because, under this aspect, social representations seek to demonstrate that these relations of meaning are manifestations by the way individuals represent the world. The same author states that the study of social representation considers the idea of centrality (product) as a descriptive character that is based on two basic aspects: 1) the constitutive elements and the organization of the internal structure of the representation, that is, the central core; and 2) the articulating and organizing elements of the other elements that compose and give meaning to this representation. According to this idea, research that uses social representation as a theoretical and methodological axis generally takes on a quantitative and qualitative perspective, which presupposes two basic components: the content and organization of the objects represented.

It is understood that evidencing the social representation of the term technology from the structure and the relationship of the elements around the positions of

centrality and periphery is not sufficient to understand the materiality of the meanings of technology, as well as its reproduction process. Therefore, it is necessary, first, to draw a profile of the researched group to know who speaks and understand why they speak and where they speak from. Listening to the voices of the subjects, or rather, those who experience the daily training, is one of the possibilities in the search for answers to questions related to the process of incorporating technology into teaching work.

In this sense, from the application of the sociocultural questionnaire, it was possible to make some inferences about the group, namely: the researched group is mostly characterized by being composed of male teachers (60%), married, in the age group between 31 to 35 years old, naturally (81%) from the countryside of the State of Amazonas. Regarding training (initial and continuing), 82% declared they had a degree in higher education and/or other degrees. Among 20% who declare to have a graduation degree, none indicated that they had participated in a specific broad-based specialization for the incorporation of technology in teaching work. With regard to other experiences linked to Continuing Education offered by ETC Manaus for the incorporation of technology to teaching work, approximately 57% were already aware of the activities developed by ETC, however, they had not had the opportunity to participate. Approximately 42% were never aware of the existence of the Center, except through media training in education, as a result of the partnership between the municipalities that joined the E-Proinfo program for the implementation of the MTC's.

In general, regarding the indicators related to working conditions, the group has the following characteristics: they teach between 11 and 20 years of age, in the elementary school segment, having a working day that varies on average from 40 to 60/h weekly. In this indicator, the work overload with the accumulation of hours worked stands out, which, in a way, justifies absences and disinterest due to the lack of time and physical and material conditions for the participation of the training.

Regarding the structural conditions for the insertion of technology in teaching work, 62% of teachers reported that schools have computer labs, but are not in operation, and 68% of them reported that the school has the TV Escola program. This finding confirms that the arrival of computers in schools precedes any initiative related to the preparation for the construction process through critical reflection on their use. It is also noteworthy that most teachers, despite having a notebook, use it only for entertainment and didactical activities. One of the great difficulties they find is access to the internet, which is only possible in the workplace. Regarding the use of digital technologies, teachers even stated that they use the computer a lot and access the internet, however, this use is not linked to pedagogical practices, that is, the computer is used for various purposes and, mainly, for teaching and elaboration of academic works. The analysis of this information makes it possible to understand how such indicators interfere or influence the (re)production of the social representation of technology.

Given the above, it is observed that the articulation between the concept of *habitus* and field, epistemological premises of the theory developed by the French sociologist Pierre Bourdieu, allows the understanding of the production process of the social representation of technology. For Bourdieu (2004), the genesis of the notions of *habitus* and field aims to explain the concrete form of the interactions not only the specific properties of each field (literature, philosophy, politics, etc.) but also the invariants revealed by the comparison of the different universes (macrocosms and microcosms). Still, according to the author, it is possible to distinguish such notions as follows: the notion of field is related to these universes as a field of production and as a social space of objective relations; and on the notion of *habitus*, the author wanted to highlight the creative, active, inventive capacities of the social agent in action (BOURDIEU, 2009, p. 61 and 64).

In this sense, the specific field of continuing education carried out by the Educational Technology Center/ETC-Manaus is configured as a field, a relatively autonomous social space with its own rules that, although related to other fields, it is perceived that there is a dialectic in the relationship between *habitus* and situations, structurally targeted, that each particular agent (course participants and trainers) faces and that produces a practical action concerning the incorporation of technology into teaching work. Roughly speaking, it is also possible to observe the constitution of two subgroups – one constituted by teachers with the function of trainers and the other represented by teachers who participate in the training as course participants who, in a certain way, compete for space and recognition for themselves and for their symbolic productions. What is at stake in this field of continuing education is the appropriation of knowledge in relation to the recontextualization of technology and education in general and specifically to its proper use in the teaching and learning process.

In this sense, the specific field of continuing education is configured as a space of dispute, where teacher educators and course teachers defend their symbolic systems, based on the following aspects: 1) the process of defense of such systems also works as a mechanism for legitimizing the materiality and reproduction of symbolic productions around the technology object and how it is represented; 2) considering the way in which policies for the implementation of technology in educational spaces are conceived, it can also be said that the social representations of technology are shaped within distinct social fields that already exist. That is, representations are generated, determined and classified by a group of specialists in general, in a relatively autonomous field of production and circulation and are reproduced and mediated through *habitus* by the group of teachers in a specific way.

In the investigated context, it is possible to speak of social representations of technology because it considers, through *habitus*, the reproduction of two senses related to the content of evocations produced by teachers (trainers and course participants): first sense is related to technology as a process and the second, technology as a material medium. The *habitus* reproduced in the specific field of teacher education and the social

representations of technology reveal the roles played by teachers (trainers and course participants) and their effects from symbolic productions. These productions show the existence of symbolic power, from the manifestation of a hierarchy, which legitimizes the degree of difference that exists between these roles.

For Bourdieu (2009), symbolic power is the power to construct reality and establishes an immediate sense of the world. The representations and perceptions of reality would be forms of symbolic productions generated from the dynamics of symbolic systems, which are defined by the author as structuring structures and structured structures that function as instruments of communication. The forms of power in society, especially in a capitalist society, determine its mode of organization. The social structure is organized according to the way the different types of power or capital are distributed. The author highlights three types of capital as the most important to be considered within the capitalist society. They are: cultural, economic and symbolic capital. In a way, the symbolic content of the function of teacher educators is defined through higher *status* (symbolic capital) when compared to the teaching role exercised by the other student teachers.

In the view of student teachers, teachers with the role of trainer have a certain symbolic capital both in relation to the privilege of the function they occupy and in relation to their knowledge of technology as a material medium, its role and its appropriate use in education. On the other hand, for student teachers, the knowledge acquired during the training course becomes a symbolic asset, because the student-teacher expects to accumulate a certain cultural capital by acquiring a good image among other fellow teachers in their municipality of origin, by changing the way it is perceived by them their colleagues. The opportunity to participate in continuing education represents the possibility of accumulating symbolic capital for course teachers.

Finally, the acquisition of technology as a material good, by some teachers, or rather, the possession of some technological instruments shows the accumulation of some economic capital. And as the course teachers assume and recognize the importance of technology seeking to approach it, often disregarding the context of their social reality, they take responsibility for the success and/or failure of the recontextualization of technology in education. Individuals are guided by the constancy and conformity of social practices generated and that generate unconscious principles of action and reflection, schemes of perception and thoughts that materialize and are established from the relations of meaning and power.

Before any grouping by classification (into categories, classes, etc.), the items were listed, according to Table 1, from the variables of maximum, minimum frequency and order of evocations issued by teachers through FAT to the term technology. The use of Table 1 was of fundamental importance for the subsequent construction of categories and, consequently, for the possibility of inferring, analyzing and interpreting the symbolic contents obtained, through the technique of free association, to the term technology inducer.

Table 1- Maximum frequency and minimum frequency of occurrences in relation to the cutoff point and evocations issued by teachers at FAT to the technology term

#	Evocated Items	Frequency of evocations						
		Frequency	Order of Evocations					
			1*	2	3	4	5	6
1	Education	18	10	2	2	3	1	0
2	Information	26	7	4	7	4	1	3
3	Knowledge	18	6	4	6	0	1	1
4	Computer	20	4	3	4	6	2	1
5	Learning	14	3	5	2	2	2	0
6	Innovation	10	2	1	2	3	1	1
7	Compromise	6	2	1	2	0	0	1
8	Formation	5	2	2	1	0	0	0
9	Informatics	5	2	0	1	1	0	1
10	Novelty	5	2	0	0	0	2	1
11	Advance	15	1	5	2	4	1	2
12	Internet	14	1	2	5	3	1	2
13	Work	9	1	2	1	3	2	0
14	Change	6	1	2	1	2	0	0
15	Improvement	6	1	0	1	2	2	0
16	Evolution	5	1	0	1	0	1	2
17	Easiness	8	0	2	1	0	3	2
18	Media	7	0	0	1	1	2	3
19	Entertainment	6	0	0	2	0	0	4
20	Research	6	0	0	2	1	2	1
21	Communication	5	0	1	2	1	1	0
22	Interactivity	5	0	0	1	2	2	0
23	Modernity	50	0	1	0	0	1	3

Source: Elaboration of the authors.

* Number of times the word was reported as the first evocation.

As shown in Chart 1, the contents of the evocations represented by the words: education, learning, advance, change and innovation in relation to the represented object configure symbolic productions around the meaning of technology as a process. Due to the content covered in the training, there is a construction of the feeling of exaltation to education as a basis for the transformation and improvement of other sectors of society. Another sense, built around the word education concerning the term technology as a process, is that from the processes of innovation and change made possible by technology, there is the acquisition of knowledge and, consequently, learning.

Chart 1- Category related to the justifications for evocations issued by teachers to the sense of technology as a process

Categories		
Evocations	Subject	Justification
Education	5	As education is the basis of all knowledge... Technology is the fundamental basis of teaching-learning in education.
	19	Because with it (technology) and through education the individual will be able to transform the society where they live.
	34	Because education according to the law is everyone's right, especially today in the world in which we live. In other words, in the contemporary world, we all need technology in education to advance further.
	35	Because in the modern world, technology expands knowledge.
	36	Education is the most important because it is what makes technology grow... whether in scientific research, etc.
	44	From education on, all other segments are improved or expanded and technology is the degree of investment in education that the country currently has or in its government plan.
	64	Because technology, in fact, is the key to education, and we are responsible for the acquisition of new knowledge and, consequently, contribute to the formation of critical, reflective and active citizens.
	67	Technologies must be part of the day-to-day of schools because education is the basis of society.
	68	Technology should be an important tool to assist in the educational process (education).
Learning	15	Everything we aspire to, we have to learn to be able to innovate, invent... to always go in search of the new (technology)... it is necessary to improve learning and always share.
	65	It is important that in the globalized world people need to know the technology so that there is learning from the world and for the world.
	9	Everything that is new brings learning and is not different with technologies, so learning is more important.
Advance	62	It means innovation of man's work, making it more practical, facilitating their learning, and accelerating progress, information and communication.
Change	52	Because when there are technologies in society, innovations automatically appear, changes. These changes can sometimes or may not cause us problems.
Innovation	25	Because it is through great technological innovations that we, humans, adapt to priority changes in our lives.
	57	Technology is important because it requires innovation from the individual in terms of changing posture.
	25	Because it is through great technological innovations that we, human beings, adapt and place it as a priority in our lives.

Source: Elaboration of the authors.

According to Chart 2, the evocation contents represented by the words knowledge and information are also related to the meaning of technology as a process. The content of the evocations demonstrates the treatment of words as synonyms, as there is an equalization of their senses, that is, information is equal to knowledge. However, although both are constraints to the sense of technology as a process, the meaning of the word information precedes the meaning of the word knowledge when it is indicated that the acquisition of information precedes the acquisition of knowledge and not the other way around. From knowledge, information can be obtained.

Chart 2- Category related to the justifications for evocations issued by teachers to the sense of technology as a process

Categories		
Evocations	Subject	Justification
Knowledge	3	Because when I started studying [...] I renewed my knowledge more and the study got better.
	4	Knowledge moves the world. And all technology is only valid if it awakens the desire to know... and knowing is inherent to human beings.
	18	Knowledge is the most important thing to acquire (technology) and share with others.
	21	It is through technology that we achieve the necessary knowledge... And what we want to discover.
	28	Because knowledge is a necessary and specific skill for the field of technology.
	47	To enter modernity, it is necessary to have knowledge and through them progress will be made with students, starting from the dynamism of the educator, where there will be unity in the modern world.
	47	To enter modernity it is necessary to have knowledge and only through them will there be progress with students, starting from the dynamism of the educator where there will be unity in the modern world.
Information	24	Information is the most important word in the field of technology because through Information and Communication Technologies we can acquire knowledge... because it informs and forms knowledge.
	31	Because technology helps us to have information and be informed in this globalized world.
	38	It is through information that we grow as a social being, as a person and as a professional.
	42	Through information we can acquire knowledge to disseminate it.
	43	Because it leads us to provoke knowledge in our students.
	45	I chose the information because it was inserted with the technology.
	43	Because it leads us to provoke knowledge in our students.
	54	It is inserted along with technology.
	54	When it comes to the internet, it brings information about any situation we seek.

Source: Elaboration of the authors.

According to Chart 3, the contents of the evocations represented by the words computer and internet reveal yet another category related to the sense of technology

as a material medium. In this category, there is an indication of the importance of the computer as a means of not only originating the use of technology but also enhancing the work with the internet.

Chart 3- Category related to the justifications for evocations issued by teachers to the sense of technology as a product

Categories		
Evocations	Subject	Justification
Computer	26	Because technology starts with the computer... it (computer) leads the human being to be curious.
	27	All technology started with the computer.
	32	The computer is the main vehicle for working with current technologies.
	39	Without a computer, there would be no way forward in the globalized world.
	48	Because it is a technological instrument that is essential in my daily life because with it I carry out my professional and personal work. As I take the distance physical education course, it (computer) is practically the most important instrument.
Internet	12	The internet is a technology that takes us to other spaces and to use other applications.
	22	The internet is a technology that allows worldwide communication.
	13	Because with the advances of the globalized world it is important to have a technology like the internet as a tool for the information and learning of our professional activities.
	33	This technology is very important for us to do our job... and to move forward and improve our knowledge.

Source: Elaboration of the authors.

For Moscovici (1978), social representation considers actions produced from communication processes that, in the context of interpersonal and group relationships, would have a social and relational function. Therefore, the theoretical assumptions of social representation consider social behavior as symbolic behavior. In this sense, the author demonstrates how a scientific theory, in the specific case of psychoanalysis, is apprehended and modified based on the actions produced in the context of interpersonal and group relationships composed of a set of socially distinct people. Thus, the author reveals that it is possible to make valid, through apprehension, in a psychosociological dimension, the knowledge produced by common sense.

Although the word education can represent what is most structured in relation to the term technology, the processes of production and materiality of the sense of technology, in the specific field of teacher education, suffer the influence of autonomous social fields and appear as intentionally created artifacts that participate in reproduction and structures of social domination. It is possible to apprehend the process of continuing education as a way of access and participation for those who live and reconstruct the teacher education policy on a daily basis, to overcome common sense and effectively build a counter-hegemonic proposal against hegemony that does not ignore feelings, the resistance of teachers and that considers in the processes of construction of knowledge the interactions between teachers and students, different languages and didactic mediations.

According to Jodelet (2005), social representation is not only the result of accumulated experiences but the action of individuals on the outside world. In this sense, it can be said that in addition to the ideological perspective of overvaluing a global technological culture (superior), to the detriment of local culture (inferior) considered as a by-product of a dominant culture, there are, around social representations of the term technology, reproduced by a group of teachers (students and trainers), different configurations in the maladjustment modes that determine the coexistence of two meanings: technology as a process and as a material medium.

Final considerations

This work tried to show the process of construction of the social representation of the term technology. Thus, it was observed how the term was used with different meanings and different purposes. This fact promotes the reproduction of many definitions and concepts that are often used in an indiscriminate and imprecise manner. Still, concerning the field of teacher education, it was first observed that the courses were founded on technical rationality, within a technicist perspective and predominantly marked by training, recycling and qualification actions, in which the concerns were the mere use and application of techniques totally disconnected from reflection on teaching action.

Based on the analysis of teacher training policies for the insertion of technology in teaching work, we first verify the orientation of international organizations that show a match between the terms of technical and technology. This equivalence influences the transposition of the meanings originating from the world of work, through the process of productive restructuring of capital to the field of education, based on the ideologization of technology made through the withdrawal of this field from its historical bases. And yet, in a meticulous way, the inculcation of a discourse that attributes responsibility for the success or failure of the training process to the teacher. With regard to this, in the training process for the implementation of the MTC's, a curious fact was observed during the interviews with the teachers surveyed: many ends up absorbing this discourse and fail to realize what are the limitations related to regional and local specificities, such as difficulty accessing schools, access to the internet and other material resources, school building structures, etc.

Another finding was that the apprehension of the social representations of technology from the perspective of teachers, in the Amazon context, reveals that the meanings and materiality of the term are shaped within different and existing social fields. This is because, although the field of (initial and continuing) teacher training may still represent the possibility of a proposal or project against hegemonic training, the social representations of technology, legitimize the perpetuation of pre-established power relations from the maintenance of logic of technical rationality.

However, in this movement, based on the development of the research, it was possible to identify four implications for the educational field, namely: 1) at the same time that discussions on the theme of technology, in the perspective of the various areas of knowledge, are limited to discussing its use and its positive and negative effects, it is

also possible to capture the ideological character that often hides some contradictions that exist in capitalist societies; 2) the socio-historical aspect in the construction of the concept of technology also made it possible to perceive that, despite the fact that it is understood as a subcategory of the work category, it is impossible to deny its importance because it is always linked to life through the systems of social relations and technological transformation processes; 3) the training courses instituted by MEC (Ministério da Educação - Brazil - Ministry of Education), on the E-Proinfo platform, are characterized as closed packages, with pre-established content and produced by a group of specialists disconnected from the specificities of the Amazon region in general and specifically from the State from Amazonas; and, finally, 4) through the contents covered during the training courses, teachers modify their symbolic productions around the technology object, learn to take it as valid, recognize it and overestimate it.

In view of the above, it can be said that in addition to the ideological perspective of overvaluing a global technological culture (superior), to the detriment of local culture (inferior) considered as a byproduct of a dominant culture, there are around social representations of the term technology, reproduced by a group of teachers (students and trainers), different configurations in the maladjustment modes that determine the coexistence of two meanings: technology as a process and as a material medium.

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