



Article

Education and digital media: the necessary synthesis of the use value/exchange value contradiction

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Abstract

Use value refers to the usefulness of social productions in the sense of the increasingly effective fulfillment of human needs, as well as the production of new, ever richer, human needs. However, in a society oriented by the logic of the capital, thus oriented to the production of goods for exchange (commodities), the use value will always be determined, though not unilaterally, by the fact that it is in indissoluble unity with the exchange value, which leads, as a rule, to the secondary consideration of supplying/production of needs in favor of the increased production of surplus value, the source of capital profit. This paper analyzes, employing literature review, a discussion about the contradiction of use value/exchange value incident on the use of digital media in Education. Based on the Marxian dialectical method, a discussion is made about this contradiction, analyzing (abstracting, isolating), on one hand, the rich possibilities opened by the development of these technologies; and on the other hand, the process of commodification present in the educational phenomenon, which interferes with the realization of that possibilities. As a synthesis, it is argued that the ontologically human moment, oriented to the use value, although determined by the purpose of producing surplus value, constitutes the fundamental social reference for the critique of the commodification process that occurs in education in general, with consequences in the way the means necessary to achieve the ends are conceived and adopted, a fundamental critical attitude for digital technologies to be part of an effective humanization process.

Keywords: Marxism, Education and labor, Technology uses in education.

Yesterday, technique was submitted. Today, led by the major actors in Economics and Politics, it submits. Where is the servile Nature? In fact, it is the man who becomes enslaved, in a world where the dominators do not want to realize that their actions may have goals, but are meaningless.

(Milton Santos²)

Introduction

This study takes the theme of the contradiction between the (rich) potential and the effective insertion of digital media in Brazilian education,

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² All the quotations are freely translated from the original article in Portuguese.

especially in public schools. Several studies have been dedicated to the subject, under different prisms, including the important discussion and/or proposition of the pedagogical use of artifacts, which are increasingly varied (MACEDO *et al.*, 2011). Other studies have been dealing with the various barriers to reach this potential, due to needs of different orders, but especially in the field of teachers training and the availability of resources, with adequate maintenance (SOUZA, 2017; FREITAS JR, 2015). Yet another strand seeks to highlight the contradictory effects of using these means, considering that they are suitable for other activities besides educational ones. It is worth highlighting the study by Prioste (2016), on the *bonds and embarrassments* that affect adolescent Internet users, transiting through the themes of a *new psychic economy* and widespread myths, such as that of digital natives.

In addition to these studies on effective insertion processes, capable of empirically revealing important potentialities and impasses, other fertile research lines are dedicated to analyzing aspects of the conceptual nature with which the problem is treated within a complex of social interests, often antagonistic. Barreto (2012, p. 42) analyzes the hegemonic discourse in this field, characterizing the existence of a “reduction of the multiple possible meanings of ICT in education”, as a result of disputes over the established meanings and possible displacements (resignifications) aiming at legitimizing a given position. For the author, it is essential to identify the character of the currently hegemonic position that affirms ICT as a *scientific-technological revolution*, assuming them as “determinants of processes in which they are also entangled” (*ibid.*, p. 45); and overcoming this hegemony, based on the concrete understanding of the duality placed between *possible uses* and *hegemonic uses* (*ibid.*).

It is in this line of theoretical investigation that the present study is inserted. A discussion is conducted through an essay, based on a bibliographic review on determinants of the use of digital media in Education, having as axis of analysis one of the most fundamental contradictions of the order of capital, namely, between use value and exchange value³. This path is considered fertile, given the existing tensions between these two forms of value, as characterized by Harvey (2016, p. 27): “as they tend to be in conflict, they constitute a contradiction that, from time to time, can provoke a crisis”. The bourgeois society contains, as a constitutive element, an inversion: the use value, attached to the inexorable metabolism of man/nature, exchange mediated by labor and oriented to the satisfaction of vital needs, is seconded according to the exchange value: “The producer's objective is to obtain exchange value, not use value. Creating use value for other people is a mean of achieving this end” (*ibid.*, p. 29). Marx reveals an important element of support for this inversion when dealing with the *fetishism of commodities* and its secret:

The mystery of the commodity form, therefore, is simply that it takes the social characteristics of men's own labor and reflects them back to men as the objective characteristics of the products of labor themselves, as the social natural properties of these things. It thus also reflects the social relation of the producers to the totality of labor as a social relation of objects,

³ It is not by chance that Harvey (2016), in the study *17 contradictions and the end of capitalism*, places this contradiction first, right in the first part (The fundamental contradictions).

one that exists independently of the producers (MARX, 2017a, p. 147).

Such fetishistic character of the commodity fulfills the role of hiding the social nature of the relationships established between the producers and between them and the total labor, thus naturalizing them, and thus making possible different types of alienation. Marx, in the preparation of *The Capital*, had already reached more elements to respond to the "radical question" of the 1844 Manuscripts: "why, if labor is the source of all wealth, the subject of this activity - the worker - is in such an unequal and disadvantageous situation with respect to the capitalist" (SÁNCHEZ VÁZQUEZ, 2007, p. 121). In the mentioned *Manuscripts*, Marx (2010) already situates the phenomenon of alienation as a process that occurs, not in the sphere of consciousness, as in Feuerbach, but linked to real, effective processes of material production of life, which translates into the emptying of labor as objectification of vital, essential human forces, that is, work characterized as a negation of the human. Indeed, Marx says that "the wretchedness of the worker is in inverse proportion to power (Macht) & magnitude (Grösse) of his production" (*ibid.*, p. 79), and it unfolds both in the alienation of the worker in relation to their product (do not recognize themselves in it, rather, it turns against the worker); in relation to themselves, insofar as they do not recognize themselves in their activity, which is also strange to them; and finally with others, especially with the capitalist, who is in a hostile relationship, although indispensable, with the worker (*ibid.*). It is also worth highlighting (to be resumed later in this text) about Marx's consideration on the phenomenon of alienation, that is, the participation of the alienated worker in the engendering of his own alienation, or in the self-alienation:

Thus, through estranged labor man not only engenders his relationship to the object and to the act of production as to powers that are alien and hostile to him; he also engenders the relationship in which other men stand to his production and to his product, and the relationship in which he stands to these other men (MARX, 2010, p. 87).

Once settled these key issues, it is explicit that the foundation of this study is the historical dialectical materialism, whose core categories put the requirement to conceive the social reality as "synthesis of multiple determinations, hence unity of diversity" (MARX, 2011, p. 54). This stance requires the use of the "two-way Marxian method" (LUKÁCS, 2013, p.42), according to which the understanding of the social being demands:

[...] first to decompose, through the analytical-abstract way, the new complex of being, to, then, from this foundation, return (or advance towards) the complex of the social being, not only as a given and, therefore, simply represented, but now also understood in its real totality (*ibid.*, p. 42).

In accordance with this theoretical-ontological position, it is assumed that Education is a socially determined phenomenon; therefore, it is a field where antagonistic interests are manifested, not fitting the naive view that education is capable of unilaterally transforming society; but, equally, the view that the educational field should be totally and unilaterally determined must be moved apart (SAVIANI, 2008). This position, based on the understanding of the

dynamic and contradictory character of society, is assumed to be the most fertile for understanding the phenomenon of the insertion of digital media in Education, overcoming any idealistic position that attributes to the means (whether they incorporate the latest technology generation or not) the role of Education redeemers.

In addition to this Introduction, the text is organized as follows: In section 2, considerations are made about the growing process of commodification of education; in section 3, the use value/exchange value contradiction regarding the production/use of digital artifacts aimed at the educational field will be discussed; in section 4, the incidences of the same contradiction in the teaching work will be analyzed. Following, the final considerations are presented.

2 School education and the use value/exchange value contradiction: the process of commodification

Marx's exposition on the dynamics of the capitalist mode of production stems from the observation that wealth in this society “appears as a ‘huge collection of goods’” (MARX, 2017a, p. 113) and takes as a starting point what is immediately revealed about commodities, that is, they constitute, inseparably, use values and exchange values⁴. Marxian studies will be oriented towards the discovery and scientific formulation of the objective laws of the functioning of capitalism, which allow us to understand it as an increasingly intensified movement of exploitation of the unpaid portion of the labor force (surplus value), source of profit both in the production sector and in the capital related to the circulation of goods, land rent, interest financing. Such studies also revealed the inescapable tendency to increase the *organic composition of capital*, an important determination of an imminent characteristic of this mode of production: the permanent constitution of crises and the decreasing trend of the profit rate (MARX, 2017b). The increasing automation of production is certainly a positive element, such as an increase in human productive power; however, subject to the production relations proper to bourgeois society, it constitutes a relative increase in fixed capital and a consequent decrease in the participation of variable capital, which in fact produces value, with two consequences that potentialize crises: decrease in the value of goods and negative pressure on consumption capacity, especially for the majority of the working class.

Hence, the need for the capital to permanently expand markets, which comes up against material limits: after the globalization of capital, with the end of the former Soviet Union, the geographical limits for this expansion are firmly placed. The solutions for the maintenance/expansion of surplus value extraction involve, globally, but especially in peripheral countries, a combination of factors such as intensification of labor exploitation, with the movement in search of

⁴ Later on, Marx will say: “When, at the beginning of this chapter, we said [...] that the commodity is use value and exchange value, that was, to be exact, wrong. The commodity is use value – or object of use – and ‘value’” (MARX, 2017a, p. 136), as it has already been demonstrated that exchange value is nothing more than the manifestation or expression of value, a category that confers commensurability to different goods. Following Harvey (2016), the terms use value and exchange value are adopted in this text, due to their expressive strength and the fact that the expression of value occurs as exchange value, and daily in prices (exchange values expressed in cash).

labor markets with less cost (with impacts on local/global job creation), destruction of labor rights and national social security systems, and an intensified attack on the public fund, euphemistically (and propagandistically) called fiscal austerity (HARVEY, 2014). On the other hand, since the movement of capital always requires the expansion of markets, another outlet for capital is the dynamics of commodification of spheres that were not (or less intensely) exploited by capital, such as health, social security, education etc., measures combined to ensure a pattern of accumulation for the hegemonic classes, to the detriment of the well-being of the majority of the population that suffers an ever more intense concentration of wealth and income, and of unsustainable pressures to the environment. Another mechanism employed is linked to the indebtedness process, both of families (as an element of stimulating consumption in the short/medium term) and the debt system. It should be stated that the hegemonic classes thus ensure a pattern of accumulation, but not in the long term, given the evident contradictions present in these measures, with a negative impact on the consumption side, essential for the continuity of the production/circulation cycles of goods, as well as in the tax collection system.

Education, as a useful asset, is one of the most important human developments. In effect, it assumes the role of inserting individuals belonging to the human species in the humanization process, understood as (and in the exact measure of) the appropriation of historically produced human culture (SAVIANI, 2005), whether expressed in material or in immaterial goods, tied to the satisfaction of ever more developed needs (SAVIANI; DUARTE, 2010). If, in the beginnings of humanity, Education takes place simultaneously with the labor process itself, with the advent of class societies, the school is constituted as the very space for education (SAVIANI, 2007), first only for those belonging to the dominant classes and, with the constitution of the capitalist society, linked to a project of universalization, still incomplete, especially in countries with dependent capitalism.

Education is, ontologically, constitutive of humanity, since human beings are constituted as such by labor, teleologically oriented activity, that is, by the establishment of ends (linked to the satisfaction of needs, while other needs are created), which requires true knowledge of reality (causality relationships), a condition for mobilizing the appropriate means to achieve the ends (LUKÁCS, 2013). Thus, knowledge and its transmission to new generations is essential for the historical dynamics, for the very constitution of the social being; hence the character of universal right of education. In capitalist society, the fact that education is an intangible asset does not prevent it from becoming a commodity (like other immaterial goods, such as health care, among others). Such a conversion, however, contrasts with the character of universal law, since it is subjected to the logic of producing surplus value: its exchange value dimension is secondary to the use value counterpart.

Several studies have been pointing out the intense *commodification* process that Education has undergone in recent decades, in a context of ultraliberalism with a high predominance of the financial sector, both in the appropriation of the socially produced wealth and in its power to functionalize the State, dictating the directions of society (SGUISSARDI, 2015). This author formulates an expressive synthesis of the phenomenon, affirming that "the boundaries between the public and the private/mercantile are being revoked". (*ibid.*, p. 869). One of the most significant aspects of this process is expressed

in the strong presence of the business sector in the formulation and, increasingly, in the execution of educational activities, which leads Freitas (2012) to characterize, very precisely, as *business reformers* the agents of this movement, which, based on the motto of broad participation by society in issues related to education, effectively seek to “demoralize the teaching profession [aiming at] the destruction of the public education system” (*ibid.*, p.379), and that express in practical terms in a combination of *accountability* (exacerbated attribution of responsibility to teachers for success and – especially – for the failure of school performance); *meritocracy* (encouraging competition for quantitative performance, linked to rewards and sanctions); and *privatization*, under various modalities, such as the contracting of management/administrative activities, the preparation of teaching materials and the adoption of voucher systems (the cases of Prouni and Pronatec are examples), draining public resources to the private sector. This demoralization and privatization framework compromises even the liberal notion of democracy, according to Freitas (2012, p. 396), since “only a public space can deal with the formation of youth in order to meet national interests within the necessary plurality of opinions existing within society”.

Shiroma (2018) takes as an object another facet of the phenomenon of commodification, expressed in the evolution, in the last decades, of the managerial logic in the teaching policies, also analyzing the role of multilateral organisms with their orientations to national educational reforms, loaded with ambiguity. On one hand, they express, as a consensus building strategy, widely accepted parameters such as the need for excellent teachers, investing, however, in the disqualification of those teachers, accused of “low performance” (*ibid.*, p. 103), shamelessly pointing as the main obstacle to replace those teachers with “more qualified” ones the politically active union organizations in Latin America. The analysis reveals that such reform proposals, which strengthen the perspective of socio-emotional competences, subordinating knowledge as a curricular component, effectively link the pursuit of ensuring the “mobility of businesses across continents in search of competitive advantages that favor the accumulation and process of valorization” (*ibid.*, p. 89), perspective closely bonded to the interests of the hegemonic classes of capital, with serious repercussions on teachers’ work and training.

In the context of higher education, the expansion model operated in recent history brings the strong mark of transformation from its rightful character of commodity, maintaining it as “elitist and highly qualified for a few, while acquiring traces of ‘system’ of mass and low qualification for many” (SGUISSARDI, 2015, p. 869). One symptom is the capital opening of large educational companies, which launch shares on the market, binding up to national or transnational investment funds.

The author highlights, in the period from August 2012 to August 2014, the appreciation of 314% of Kroton's shares, and 240.97% of Estácio's, highly above the market average, since the Ibovespa index (which includes 350 companies) suffered a decrease of 3.67% in the period. In addition to this relevant issue, which is the conformation of a significant part of the offer of Higher Education in the country to a logic of market capitalization⁵, Sguissardi

⁵ An article from Exame (2019) magazine, published in October 2019, suggestively titled “Change at Kroton does not convince and group loses more than R \$ 1 billion in the stock

(*ibid.*) analyzes other aspects of the commercialization of this sector, such as the legal statuses of the institutions, the specificity of concentration by knowledge areas and more profitable shifts, and also the use of distance education.

3 Rich artifacts and their integration into commodified education: field of disputation

It is appropriate to consider, initially, the potential of technologies as an elaboration aimed at increasing human productive power; that is, to place technologies in the field of labor, where the social being, universally, is faced with the need to produce use values (useful goods) capable of meeting human needs. Labor, as a privileged category for understanding the social being, effectively “is born amid the struggle for existence” (LUKÁCS, 2013, p. 43), and with its character of development as autoactivity, it is continually complexifying, always requiring more complex means, however, without ever detaching itself from the need to produce use values, as Marx makes clear (2017a, p. 120):

Labour, then, as the creator of use-values, is useful labour, is a condition of human existence which is independent of all forms of society; it is an eternal natural necessity which mediates the metabolism between man and nature, and therefore human life itself.

In this sense, it is appropriate to affirm the dynamics of human *praxis* as mediated centrally by the dialectic pair teleology/causality (LUKÁCS, 2013). The human being establishes its ends with increasing freedom as they master the means.

Saviani (2005, p. 13), immediately after characterizing the nature and specificity of education as the “act of producing, directly and intentionally, in each singular individual, humanity that is produced historically and collectively by the group of men”, affirms that...

[...] the object of education concerns, on the one hand, to the identification of cultural elements that need to be assimilated by individuals of the human species in order to become human, and, on the other hand and concomitantly, the discovery of the most appropriate means to achieve this objective (*ibid.*, p. 13).

Indeed, history shows that richer ways and means tend to favor the achievement of human goals. The means/ends relationship is also highlighted by Gramsci (1995, p. 124), when he postulates its centrality as a guiding element of a pedagogical theory, stating that one must find “in the ends to be achieved the natural source to elaborate the methods and the ways”⁶. It would

market”, includes very expressive information about the insertion process of large education (not only higher education) companies of the country in the volatile logic of the stock market world, source of losses, but also of many gains by speculators. These are, among other things, the processes of dismemberment, reconfiguration, name changes carried out by such companies, seeking to achieve the confidence of the “market”.

⁶ Gramsci (1995, p. 124) is referring to the criticisms made by the active school of traditional education, and recognizes the relevance of this criticism, given the mechanical nature of the “Jesuit” pedagogy. He highlights the “romantic” character of such criticism, justified, in some

be appropriate to question whether this necessary relationship between ends and means is something that assumes the character of obviousness. In fact, it is, if we consider it isolated, that is, not within complex relationships in society. Saviani (2005) calls attention to this apparent character of obviousness about the role of systematized knowledge in school education; and, nevertheless, points out the need for the obvious to be explained: “as it often happens with everything that is obvious, it ends up being forgotten and hiding in its apparent simplicity problems that escape our attention” (*ibid.*, p. 15).

It is a complex issue, since it is, like the entire field of school education, crossed by antagonistic interests, an ineluctable feature of class societies. In the specific case of digital technologies, if, on the one hand, there is a remarkable development of their possibilities in the educational field, one cannot lose sight of the fact that the social relations of production constitute limits for the full realization of these means in favor of the social collectivity. In the fierce framework of commodification of the Education, as already discussed, there is a strong tendency for the application of such technologies to be inserted in the logic of capital reproduction, in a double sense: as a technology to replace the teachers’ work, in certain cases degrading the action educational (as in the case of distance education in initial training or even in Basic Education)⁷; and in the discourse of the inevitability posed by the reception of these technologies, in the common sense, as symbols of contemporaneity, that is, the technological determinism that “hypertrophies the changes introduced by the ICT in social practices” (BARRETO, 2010, p. 1300). In this study, the author analyzes the adoption of distance education in teachers’ training, concluding that this trend “has led to the emptying of teachers’ work and training, starting from the determinism and reaching technological substitution, both in distance and in-person education, whether in private or public sphere” (*ibid.*, p. 1315).

Therefore, there are several determinations that clearly guide the insertion of digital media in education according to the logic of exchange value. Next, it is worth considering its other pole.

Digital media as use value

Abstracting it from its totality, here we take a pole of the contradiction that involves artifacts produced as commodities, that is, we consider the perspective of use value, or what Barreto (2012) calls *possible uses*, in counterpoint to *hegemonic uses*.

Although digital media can be used as an educational resource without a mandatory tie to the Internet, they tend to be increasingly integrated into this global computer network system, not only because of the communication resources, but also because the web applications are becoming increasingly popular, accessible from browsers, including – and especially – from mobile devices. The richness of these artifacts is centered in the countless possibilities

extent, by the need for contrast and controversy with the established position; but stands for the need to move to the “classic, rational phase”.

⁷ The Presidential Decree No. 9,057, of May 25, 2017 (BRASIL, 2017a), provided that basic education could be offered in the distance modality. In face of much criticism, some changes were made by the Decree No. 9,235, of December 15, 2017 (BRASIL, 2017b). Besides the question clearly tending to the conservative agenda for education, it is worth noting the undemocratic practice to legislate via decree an issue of such importance.

for registering and disseminating information in different formats: text, image, sound, video and different forms of combination. Hypertextuality (possibility of navigating between various texts or between parts of a text using links) was forecasted for other media, generating the notion of hypermedia.

In a field where the speed of development is a keynote, with technological generations succeeding at intervals of a few years, certain resources could already deserve the label of “traditional”: a) incorporation of multimedia as a didactic resource, enriched not only by the development of equipment itself (hardware), illustrated by the already trivialized case of touch screens, but also by the concept of *friendly interface*, that is, of intuitive use and learning, making the *use manuals* a thing of the past; b) authoring softwares, as a support to the elaboration activities by both the student and the teacher, integrating the edition of texts, images, graphic construction etc.; c) collaborative development technologies, integrated nowadays with “cloud storage”⁸; d) the increasing presence of mobile devices favoring the use – with the assistance of the teacher or not – of resources involving texts, videos, maps, simulations, graphics etc., aimed at a specific school content, being able to incorporate the application of exercises, with immediate feedback; e) immersion environments applicable to courses or tutorials, with high realism provided by increasingly sophisticated three-dimensional visual effects, given the development of storage, processing and flow data capacity; f) increasing use of virtual learning environments (VLEs), both for content management and in the administrative activities of courses (registration of frequency and concepts/grades, for example) and provision of communication environments between the components; g) the ubiquitous digital social media, enabling the creation of communication groups with different resources to be appropriated in educational activities, such as messaging and content sharing services (FERREIRA, 2015).

It is worth highlighting, due to the association with the potential for democratization of access, the consolidation of the concept of *assistive technology*, supporting the functional performance of users with some type of limitation, whether due to a disability or age. Such a perspective can contemplate both the adaptation and the design of a new equipment or technology in order to circumvent barriers for certain segments of users. Rocha e Castiglioni (2005, p. 98) mention the variants “Assistive Technology (USA), Assistance Technology (CIF/WHO), Supportive Technology (European Commission/EUSTAT) and Technical Assistance (Ministry of Health)”.

Arising from research in the field of digital technologies, not only new artifacts have emerged, but new concepts and new applications, of which it would be worth mentioning (without the intention of exhaustive synthesis, but as an example): a) support for the analysis of collaborative writing by students using computational tools, with emphasis on *text mining technology*, focused on the graphic elaboration of a network of concepts (MACEDO *et al.*, 2011); b) various tools aimed at teaching Libras (Brazilian sign language) (RIBEIRO

⁸ Storage service offered by special providers that have been increasingly adopted due to their storage capacity (variable depending on the choice of basic, free or paid accounts), possibility of access from different devices by means of identification and password, as well as the assumption of low risk of data loss, according to the reputation reached by these providers.

ROCHA *et al.*, 2018); c) use of virtual reality to simulate invasive medical procedures (TORI *et al.*, 2018).

Regarding to the possibility of expanding the access to educational resources, it is worth highlighting the phenomenon of Massive Online Open Courses (MOOC). These are online courses typically developed by academic institutions, generally without cost or restriction of access (YUAN; POWELL, 2013). There is currently a wide offer of courses in various areas of knowledge offered by recognized institutions (Berkeley, MIT, Harvard, USP etc.). It should also be noted the appearance of platforms that concentrate MOOCs from different institutions, such as Coursera, EDX, and, nationally, the Lúmina platform, developed by UFRGS. It is worth noting that the notion of MOOC is already full of ambivalences since, due to its massive character, it differs from other forms of distance education because no face-to-face interaction is part of the proposal. They can be spaces for expanding access to training opportunities, as well as following an already identified trend of restricted offers (SALCEDO, 2018) that explore the name of renowned institutions in the logic of commodity supply⁹.

The necessary dispute of hegemony

Preliminarily, it should be explicit that the very formulation of the potential of digital media artifacts (isolated consideration of the use value) is full of contradictions. For example, when affirming the “increasing presence of mobile devices” or the “omnipresent” character of social media (as was done above), it is necessary to return to these statements in order to put them back in their proper terms. Effectively, access to artifacts (both to equipment and to operating systems and applications) is not universal, but differs according to the individual’s social class. And this reality is attached to the central issue that we propose to analyze here, which is the contradiction of use value/exchange value, that is, the determinations that the process of conception, production and use of digital technologies undergoes in a society where the production is nuclearly oriented towards the exploitation of surplus value and, ultimately, to obtaining profit.

In this sense, from the point of view of dialectical historical materialism, it is not possible to affirm a unilateral determination of the exchange value pole in relation to that of use value, since, as Marx demonstrates, analyzing the relations of production with other spheres of distribution, exchange consumption, the determined element acts, dialectically, as a determinant (MARX, 2008). It is a dispute over the ways to carry out the synthesis between the use value/exchange value contradiction, which requires, from the analytical point of view, to confront the question of ideology, as a system of legitimizing a contradictory social reality, insofar as it operates an inversion, not necessarily limited to a false conscience, but including disputes over antagonistic worldviews. Such an inversion projects, in the plan of ideas, a harmonic conception (without contradictions), and, in this sense, ideological

⁹ When opening the Coursera portal (<https://www.coursera.org/>) you can read: “Your journey towards success. Learn from online courses, certificates and degrees from the best universities and companies in the world - Sign up for free”. However, by clicking on “Course list”, you can find: “Master of Computer Science”, University of Illinois; Total cost: \$ 21,440.

representations fulfill the role of legitimizing the real world, contributing to its reproduction, and, thus, placing itself in favor of the interests of the dominant class. It is worth returning to the essential bond of this theme with the issue previously dealt of (self) alienation. Marx (2010, p. 87), on the position of the worker in this process, says:

As he [engenders] his own production for his deseffectivation (Entwirkliching), for his punishment, as he [engenders] his own product for loss, a product not belonging to him, he also engenders the domain of whom it does not produce on production and on the product. As he is strange to his own activity, he appropriates to the stranger (Fremde) the activity.

If the worker participates in the reproduction of relationships that oppress him, the belief systems that legitimize reality play a fundamental role. And it is important to emphasize that the dispute over ideological positions cannot be limited to facing ideas *per se*, but to do it simultaneously in relation to the real social contradictions from which such a belief system arises.

One aspect of this confrontation concerns to the common sense/philosophical conscience contradiction, as a way to overcome the mechanical reproductions of characterization of technologies as sufficient in themselves to raise the level of achievements of the ends supposedly linked to it, or, in other words, the fetishist view of digital media artifacts (FERREIRA, 2015). Saviani (1996, p. 3) thus characterizes the dynamics of hegemonic struggle linked to overcoming common sense:

In a social formation like ours, marked by class antagonism, the relations between common sense and philosophy are locked in the form of struggle - the hegemonic struggle. Hegemonic struggle means precisely: disarticulation-rearticulation process, that is, it is a question of disarticulating those elements that are articulated around them, but are not inherent to the dominant ideology and re-articulating them around popular interests, giving them the consistency, cohesion and coherence of an elaborated world conception, that is to say, of a philosophy.

In the educational field, there is a double challenge in terms of hegemonic struggle, intrinsically marked by the teleology/causality relationship: on the one hand, that of its agents, especially the teachers, insert themselves decisively and consciously in the struggle for the constitution, on the part of individuals in formation, of a conception of the world adequate to the subordinate classes, which requires the incorporation of valid and necessary elements of the dominant conception of the world, articulated to this, but not inherent to it. On the other hand, the struggle for the availability of indispensable resources includes the appropriation of the necessary knowledge, the incorporation of the rich possibilities opened by digital media. The two sides of this challenge are not separated from the struggle for teachers' valorization, with its multiple and inseparable aspects: career and salary plans, which include adequate incentives for continued education, based on a solid Basic Education, which does not dichotomize theory and practice, as well as ends and means, elements in close unity, but with their own identities.

4 Contradictions inherent in teachers' work

The discussion on teachers' work includes numerous aspects, linked to the very nature, constitution and identity of the profession, training etc. As the insertion of digital media in the pedagogical process is directly linked to this labor activity, it is worth, even if briefly, to highlight some aspects bonded to the use value/exchange value contradiction.

Initially, it is worth emphasizing their insertion in that activity that is constitutive of the social being:

Labor is the ontological foundation of human existence. Other categories, such as language, culture, thinking, ideas, traditions and morals derive from this foundation, which, in the capitalist mode of production, is subsumed and fetishized in the production of value and surplus value (VALENCIA, 2010, p. 54).

In the human labor, the dimensions of concrete labor or useful labor are in an indissoluble unit (determined by the characteristics of the object to be produced, be it clothing, a computer etc.); and abstract labor, or labor in general, which, regardless of its content and form, is “essentially expenditure of the human brain, nerves, muscles and sensory organs etc.” (MARX, 2017a, p. 147). The duration of this expenditure will determine the magnitude value, commensurability parameter between commodities, condition for their exchange:

If, in relation to the use value, the labor contained in commodities is worth only as qualitatively, in relation to the magnitude of value it is worth only quantitatively, after being reduced to human labor without any other quality (*ibid.*, p. 123).

When establishing the value category, and the way of determining its magnitude, as explained above, it is already presupposed a social form in which the production of use values for exchange predominates, aiming at the exploitation of surplus value; that is, necessarily making the use value pole secondary, which will also affect labor: in contrast to the vital character of labor, the genesis and consolidation of capitalist society transforms it into a commodity, as Engels states, further defining with meridian clarity the category of surplus value, discovered by Marx.

The labor force is, in today's capitalist society, a commodity like any other, but certainly a very special commodity. Indeed, it has the special property of being a value-creating force, a source of value and, especially with proper treatment, a source of surplus value higher than it has itself. In the current state of production, the human labor force does not only produce, in one day, a value greater than the value it owns and costs; with each new scientific discovery, with each new technical invention, that surplus of its daily product rises above its daily costs; therefore, that part of the working day is reduced in which the worker removes the equivalent of his daily wages from his labor and, therefore, on the other hand, that part of the working day in which he has to offer his labor to the capitalist without getting paid for it (ENGELS, 2010, p. 28-29).

Therefore, the concrete possibility of mischaracterizing educational labor as constitutive of the human being is placed, as its usefulness is seconded, in favor of its exchange value, which occurs openly in private educational institutions. It should be said that, although typically in a public institution such displacement should not occur, the dilution that has been occurring in the public-private frontier ends up opening this possibility even in the public sphere. An example that has become commonplace is when a set of products (textbooks, handout systems) and private activities (training, management) enter the field of public education (a phenomenon also present in other social spheres, such as health, social security, security). “This conception of society erodes the school as a social institution, changing the conception of education and the educational policy itself”, says Freitas (2018, p. 49).

Teachers’ work also strengthens its face of commodity to the extent that it incorporates the liberal perspective that has been hegemonic in the pedagogical thinking since the constitution of school systems (not yet carried out in Brazil) and going through the various “mechanisms for recomposing hegemony” (SAVIANI, 2008, p. 58). With the chronic state of the capital crisis in the last decades (HARVEY, 2014), the process of privatization of education always assumes new dimensions, not only in the conquest of new spaces for direct profit realization, but also seeking to intervene in the constitution of a new sociability characteristic of times of individualism, with the development of skills that prepare individuals for precarious and intermittent labor (within the *uberized* limit), disbelief in union organization, and the development of a high degree of resilience, adequate to the hopelessness in humanization and social transformation. Thus, “education is being hijacked by the business community to meet its objectives of ideological dispute” (FREITAS, 2018, p. 29).

In terms of the aforementioned transformations in the labor world, teachers’ work is not immune from its consideration as a commodity, which, within the logic of profit, can be replaced, with gain, by the capital. In this sense, it is worth bringing back the statement of Barreto (2010) on the incidence of technological substitution with the advance of distance education. This context of restructuring, according to Hypolito *et al.* (2009), has compromised the teacher's autonomy in his doing/thinking, due to new requirements, such as adherence to managerial models of system evaluation; and it has affected the teachers’ identities, resulting in the intensification of the teaching labor, which affects “also, and perhaps mainly, the emotional of the teachers, causing the intensification processes to be internalized and transformed into self-intensification processes” (*ibid.*, p. 100).

From the point of view of the insertion of digital media, if education is seen as a service to be acquired, and not as a universal right, the tendency is to insert these technologies away from a humanization project and associated with the achievement of degrees of competitiveness, according to the consumer’s capability. The rejection of such a degraded position is placed in a space of intense dispute and it is necessary, therefore, to highlight some central elements of such dispute. Initially, the essential consideration of the means/ends relationships must be based on the education/labor relationship, this one conceived as a vital and ontological constitutive activity of the human being, which includes (but goes beyond) the preparation for labor in the current historical form of society.

Deriving from this foundation, some points must be considered in the convergence between teaching work and digital technologies:

- ◆ To consider, in each specific context (determined by the choice of content, students' training level, availability of resources), the relationship between means/ends that surpasses both unilateralities, whether the rejection or the naive (or mechanical) adoption of a given technology, which includes considering the available alternatives, their cost/availability and the benefits for the educational action. As an example: at what level and in what ways the exposure (and the correlative dialogue) aided by multimedia projectors has surpassed the exposure traditionally based on speech and “blackboards” or their substitutes? What scientific studies guide the understanding of this and other similar issues?
- ◆ To consciously articulate the development of technical skills and political commitment linked to educational activities, elements that are mutually determined (SAVIANI, 2005); such articulation has repercussions on *stricto sensu* political action, that is, on the (necessarily collective) struggle for demands for adequate labor conditions, which includes the availability of resources. As an example or indication, an element that can strengthen the increasingly necessary collective organization of education workers is the realization, by the worker's unions, of training actions linked to digital technologies, which are guided by the defense of a concept of education that does not dichotomize the intellectual's manual labor (training of leaders *versus* executors); that is, that it does not reinforce class distinctions, affirming it, on the contrary, as a universal right.
- ◆ To consider the necessary unity (safeguarding, however, their identities, as distinct moments) between the adoption of a technology and its critical consideration, necessarily in the context of the struggle between classes that have antagonistic positions regarding the use value/exchange value relationship; and that both from the point of view of collective pedagogical planning, as well as from the reflections to be aroused in the students, and in a very special way in the teachers' training courses. For example: regarding school research on the Internet, how to overcome the tension between the rich availability of content and the possibilities open for plagiarism (copy-paste)? Such overcoming still requires a conscious attitude (in addition to the hegemonic positions) about the seductive position that maintains that knowledge construction is taking place (DUARTE, 2010). What are the effective consequences of these issues on the level of democratization in the field of education, especially in the public school that serves individuals from the working class?

Final considerations

In this article, the relationship between digital media and education was taken as an object of study. The fundamental premises of the Marxian method of knowledge production were adopted, according to which the knowledge of a given object starts from phenomena, or “chaotic representation of a whole” (MARX, 2011, p. 54), taken not as data, but as manifestations of the concrete; and, by way of analysis, or abstract process, seek the simplest determinations

of the object, and then make the way back, trying to reach the object again, now understood as a synthesis of multiple determinations. The use value/exchange value contradiction was adopted as an axis for this analysis, which affects, in general, capitalist society, the production of useful goods, whether material or immaterial.

After this path, the following highlights are considered necessary, as a summary. Firstly, it should be emphasized that adopting the use value/exchange value contradiction as an axis of analysis is to put into question the capitalist order itself, based on production for exchange in the market, with the ultimate goal of producing profit from the exploitation of unpaid portion of labor, that is, of the surplus value; an order that was historically constituted, confronting and progressively destroying the feudal, anachronistic order of production, based on a more advanced conception of the world, which included equality between individuals; equality, however, proved to be only formal, given the historical process of concentration/centralization of capital, and the consequent asymmetries of income and equity, which currently reach ethically unacceptable levels.

On the other hand, it is necessary to affirm the remarkable capacity of this production mode to develop human productive power, an indispensable element for the full constitution of human freedom. If human productions suffer a strong determination of the exchange value dimension, this determination cannot be conceived as unilateral. Furthermore, as Freitas (2018) points out, regarding business reforms, there is no way to avoid that those provoke acute contradictions: “The concrete fact [...] is that these ideas do not work, and, in addition, they generate destructive side effects that affect teachers, students and, indirectly, parents” (*ibid.*, p. 138). The challenge of facing the nefarious commodification of education movement and its technical and ideological dimensions is placed; and this challenge is part of the rescue of the use value dimension, which constitutes – it is worth repeating – the ontological aspect of the social being, in its permanent search for the satisfaction of needs, and the production of new and richer, increasingly more human needs.

The fundamental synthesis reached is that the insertion of digital media in education is a field of disputes between an effective humanization project, and another that incorporates fetishized and functionalized technologies through the logic of commodification. The project aimed at humanization effectively assumes the appropriation of human culture in its richest forms as an universal right and, therefore, as an ontological issue, it does not dispense the teleology/causality dialectic, therefore, the most appropriate means, a field in which digital media constitute aspect of great importance, as a mediation element, either because of the need for its appropriation for integration in a society where its presence is ostensible, or for its rich potential in the treatment of information, in its registration and dissemination, central components of the educational process: if information is not to be identified with knowledge (which involves complex structural and historical links) they are indispensable constituent elements of this.

The insertion of digital media in an educational project conceived as an effective humanization effort is necessarily a collective and multidetermined process, and its technical/ethical/political dimensions are indispensable and interdependent: the technical appropriation of the possibilities and ways of using technologies can only become viable in the context of an effective policy of

teacher valorization, of which the formative aspect must assume a central role. The pedagogical conceptions of those involved assume a crucial role, since their debate involves the question of knowledge and its transmission, the teacher/student relationship, the concept of autonomy etc. The rejection of the tendency to adopt positions in the field of learning to learn pedagogies (DUARTE, 2010) with a fetishized role of technologies finds materiality insofar as those elements are consciously assumed, based on a solid theoretical formation that does not disconnect from the pedagogical practice.

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