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Postdigital education: an approach from critical and media pedagogy for a post-COVID19 context

Educación Postdigital: un enfoque desde la pedagogía crítica y mediática para un contexto post-COVID19

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Abstract
The article focuses on an analytical, organised and grounded reflection on the concept of postdigital in its relation to education in the contemporary context. This reflective exercise on the idea of postdigital education takes precedence in its projection towards a post-COVID19 social stage and its links with the notions of bio-informational capitalism and the bio-political production of knowledge. The COVID-19 pandemic has marked a social turning point, as the technical reports of the European Commission point out, and inaugurates an era of chained imbalances that we, as a society, must face. From academia, we maintain the challenge of understanding and transforming contemporary educational action as a whole, both online and offline. This article seeks to analyse the premises of the present cultural logic derived from hegemonic political development and to promote an educational perspective consistent with the times. The approach of postdigital pedagogies favours an exercise of understanding reality and a critical and transformative proposal of the same. This represents an approach integrally related to the concern for teacher training, praxis and reflection both communicative and pedagogical, connecting with educommunicative studies and critical media education and multiple literacies.

Keywords
Bio-politics; Bio-informational Capitalism; Post-Covid-19; Critical Media Education; Postdigital Education; Critical Pedagogy

Resumen
El presente artículo se focaliza en una reflexión analítica, organizada y fundamentada sobre el concepto de lo postdigital en su relación con la educación dentro del contexto contemporáneo. Este ejercicio reflexivo sobre la idea de educación postdigital cobra protagonismo en su proyección hacia un estadio social post-COVID19 y por sus vínculos con las nociones de capitalismo bioinformacional y producción biopolítica de conocimientos. La pandemia del COVID-19 ha supuesto un punto de inflexión social, tal y como apuntan los informes técnicos de la Comisión Europea, e inaugura una época de desequilibrios encadenados que como sociedad debemos afrontar. Desde la institución académica mantenemos el desafío de comprender y transformar la acción educativa contemporánea en su conjunto, tanto online como offline. Este ensayo científico procura analizar las premisas de la lógica cultural presente que deriva del desarrollo político hegemónico y promover una perspectiva educativa coherente con los tiempos. El enfoque de las pedagogías postdigitales favorece un ejercicio de comprensión de la realidad y una propuesta crítica y transformadora de la misma. Un enfoque relacionado de manera integral con la preocupación por la formación docente, la praxis y la reflexión tanto comunicativas como pedagógicas, conectándose con los estudios educomunicativos y de educación mediática crítica y las múltiples alfabetizaciones.

Palabras clave
Biopolítica; Capitalismo Bioinformacional; Post-Covid-19; Educación Mediática Crítica; Educación Postdigital; Pedagogía Crítica

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1. Introduction

It is significant that in April 2020, at the height of the global alert over the COVID-19 pandemic, Noam Chomsky (2020) asked a question about education that transcended the circumstances of the moment. The question he posed was: "Do we want a society in which children are treated like receptacles into which you pour water and something comes out?" This was a question that concerned more than how we were managing education in the context of a global health crisis that has since evolved and continues to have all kinds of repercussions on our society today. It is in fact a timeless question, but one which, from a certain perspective, takes on special importance as we begin to analyse how we have tackled and continue to tackle an exceptional situation in political, social and of course educational terms.

The extraordinary circumstances of the pandemic invited us to reflect on it as something more than a one-off scenario. Today, we are able to recognise it as a crisis that represents a turning point for society, as pointed out in the technical reports of the European Commission (2021). The findings of the aforementioned EC report reveal the differences between the COVID-19 crisis and earlier recessions and provide evidence, for example, of the response to the crisis at the socioeconomic level: changes to the relationships between corporations and consumers, restrictions on mobility, and a profound transformation of the organisation of labour due to the boom in online business.

As Luis Camnitzer suggests in his analysis of the educational and social context of the pandemic, COVID-19 may mark the beginning of an age of permanent crisis, as it has impacted every aspect of society (Camnitzer in Freedman & Escaño, 2022), setting off a complex series of social imbalances, where the collapse of healthcare systems gives way to military conflicts, energy crises, and/or climate disasters. In this sense, as a starting point for other global crises of the twenty-first century and their impact on education, the pandemic depression has had an impact on political, economic and social issues, which in turn have had an impact on the pandemic. The effects of the pandemic on education could be with us for decades, with short-term learning losses, a drop in earning opportunities for the current generation of students (representing nearly 10% of global GDP), and the certainty that many countries will fall even further behind in the pursuit of their learning poverty goals (Blake & Wadhwa, 2020).

The pandemic crisis has thus offered an opportunity for collective reflection on socio-educational issues, while at the same time it has made the need for such reflection all the more urgent. This is evident in the academic literature on the subject, an emblematic example being the trilogy of studies conducted by a large and diverse team of educators coordinated by the professor and researcher Petar Jandrić (Jandrić et al., 2020; 2021; 2022). This research, implemented in three annual phases from 2020 to 2022, constitutes a rich collaborative reflection on the global educational situation in the COVID-19 era, with the participation of more than seventy educators from around the world. The socio-educational reflection included the exploration of the role and significance of biopolitical production, the involvement of its various actors (Hardt & Negri, 2004; Garbarino, 2022; Prozorov, 2022), and its interconnectedness with the digital dimension, defined today according to the concept of Industry 4.0 (García-Loro et al., 2021; Jim'Ain et al., 2020) as well as postdigital relationships (Savin-Baden, 2021; Jandrić & Ford, 2022; Jandrić et al., 2019).

In the context of education, the COVID-19 outbreak and the subsequent post-pandemic reality have exposed some gaping holes in the political fabric underpinning our international strategic plans, while at the same time widening the existing gaps (UN, 2020; ECLAC, 2022). As we now begin working towards a post-COVID-19 world, we can better assess the impact on an education system disrupted by successive international lockdowns and forced to turn to digital technology as a last resort. But something went wrong, and it could be argued that it has yet to be put right. Following a pandemic situation that stopped 1.6 billion schoolchildren from attending classes, the gargantuan efforts needed to return to normal have pushed society as a whole to the brink of collapse, as the pandemic gave rise not only to a global health emergency but to a clear global educational emergency as well (Martín, 2021).

Our system of educational institutions has always treated digital education as a utilitarian appendage to capitalist digital and computer knowledge, taken to the extreme based on political and economic norms in place for years (McLaren, Escaño & Jandrić, 2018; Peters et al., 2020; Polanyi, 2003). Within this system, there has historically been a lack of attention given to training in media pedagogy (Aparici, 2010), despite a cultural context that for decades has been committed to the notion of the *network society* and its connections to a broader historical tradition of the concept of the network itself and its development in the media context (Castells, 2000; Bush, 1945; Baran, 1964). However, the contemporary impact of digital technology is at odds with an institutionalised educational approach whose anachronistic and outdated nature is accentuated in an age of algorithms that cause so much social uncertainty (Aparici, Escaño and García-Marín, 2018; Aparici and Martinez, 2021). This has laid bare the lack of socially committed, critical digital training and praxis outside the instrumental paradigm,

and the submission to this instrumental approach to technology has encouraged the institution and its agents to ignore the gaps inherent in the digital divide itself, placing the focus on individual rather than structural problems (Kuric-Kardelis, Calderón-Gómez and Sanmartín-Ortí, 2021).

Our sense of educational responsibility will always keep teachers and researchers alert to the challenge of engaging in activities of criticism and social transformation that reflect our commitment to a proportionate response to this series of imbalances calling for our attention. We have to tackle the challenge of understanding what happened and what went wrong with this educational activity (online and offline), the challenge of analysing the cultural roots of the digital context and implementing pedagogical solutions accordingly. This analysis should begin with a postdigital approach that can connect us to the dominant technopolitical logic (Aronowitz, Martinsons & Menser, 1998; Peters, 2012) in order to analyse the agents involved in laying the foundations of knowledge, culture and education.

In view of the above, this paper explores the underlying assumptions of the cultural logic of the political hegemony. However, the intention is to go further than merely adapting to a conceptual and methodological approach that can explain its structure, orientation and form, in this case drawing on the ideas of Greetham (2001) and Vélez (2000). This paper thus adopts Theodor W. Adorno's (1984) view that an essay should challenge the ideal of unquestionable certainty and the ability to perceive it clearly and distinctly. This analytical approach can shed light on the assumptions of the current cultural logic that has given rise to an educational perspective in need of critical analysis in order to bring about an ethical pedagogical transformation consistent with the contemporary context. This approach, which entails a pedagogical, critical and emancipatory (Freire, 2007; Illich, 1971) examination of a digitally transformed reality shaped by the network society, is in keeping with postdigital studies of science, education and the humanities.

2. Conceptual and analytical discourse framework

2.1. From the cultural logic of cognitive capitalism towards bioinformational capitalism

A clearer understanding of the current state of education in this digital age calls for a structural analysis of the cultural logic on which educational activity is based. This analysis requires a review of concepts that first emerged in the final decades of the twentieth century, useful notions that played a key role in laying the foundations of the conceptual framework of education today.

A theoretical starting point for this analysis, considered as an initial conception for subsequent theories of cultural development, is the concept of the *society of the spectacle* developed in the 1960s. This concept was introduced by Guy Debord in a book written in 1967, and subsequently developed in a documentary film made by the same theorist in 1973. Highly symbolic for a notion that reflected on the *spectacularisation* of reality, Debord's thesis denounced the dichotomy of reality and its representation. This idea has acquired a heightened value in our era: the image is the cornerstone of our Western culture, as we have turned the existence and consumption of images into our *modus vivendi*. The spectacle is not the set of images itself, but the relationship between subjects mediated by those images, which in turn are revealed to be a part or the whole of society itself (Debord, 1967). This new definition of media and society entails a new way of understanding economic flows, images, culture and commodities. In direct relation to this reality, as Fredric Jameson (1996) was already arguing by the end of the twentieth century, the distinction between media and market becomes blurred: products are images and vice versa. In today's world, television, cinema, digital media, etc., are all means of cultural and communicative production, no longer merely the map but the territory itself. From Adorno's perspective (1980), the power of aesthetic production is the same as the power of useful work, with the same teleology. What might be called the aesthetic relations of production are merely the manifestations or traces of the forces of production at the social level. Cultural products reflect this social process and the articulation of their elements to constitute a whole obeys immanent laws that are directly related to societal laws (Adorno, 1980). Image production has thus become a reflection and an economic engine in its own right, just as Clark Kerr foresaw (quoted in Debord, 1967).

In this sense, in light of the current economic reality of Industry 4.0, the hegemonic economic position of the audiovisual and digital industries in the twenty-first century is clear: the fusion of society, spectacle and market in contemporary media is perfectly consistent with the cultural logic. This means that the ideology of the market should not be conceived of as a supplementary space, unrelated to the global economic crisis (Jameson, 1996). However, as Martín Prada (2018) points out, it is possible that in this mediatised construction of society the dichotomous distinction proposed by Debord in his hypothesis of the society of the spectacle would no longer apply. The distinction today between real and virtual worlds is unclear, as when all aspects of life are made visible and images become social actors, such images can no longer be characterised as a *negation of life*. It no longer makes sense to speak of a conflict between being and seeming, a world in which the true is a moment of the false (Martín-Prada, 2018). The blurring of this distinction makes reality an inextricable combination of representation and what is

represented, of the digital and the non-digitised, of online and offline contexts. This "new" technosocial context of unification operates in association with cultural norms whose evolution is intimately tied to political, social and economic developments.

We are living today in the age of bioinformational capitalism (Peters, 2022), a notion related to the concepts of the "global knowledge economy" and "knowledge capitalism." According to Michael A. Peters, these concepts have been used since the 1990s as a way of describing the last phase of capitalism in a process of global restructuring, understood as the inevitable consequence of recent socio-technological developments. However, as Peters himself points out, and as also suggested by Besley, Jandrić & Xudong (2020), this notion is not characterised as a *term of approbation* but as a *disruptor*. It is a concept that first situates the knowledge economy as a form of "knowledge capitalism" in an "info-tech digital capitalist historical phase" that constitutes a profound structural transformation. At the same time, this historical phase also offers other radical possibilities that in turn create the potential for the free exchange of knowledge and conditions approximating "knowledge socialism," based on "collaboration, exchange and the peer economy."

At the turn of this century, Manuel Castells (2000) was already connecting the idea of a new economy to certain specific phenomena operating internationally, understanding this new economy as informational, global and networked: *informational*, because productivity and competitiveness depend on the ability to generate, process and effectively apply information; *global*, because production, consumption and circulation are organised worldwide; and *networked*, because in contemporary historical conditions, productivity and competition develop on a global network of interaction between business networks in a world that no longer overrides laws or economic cycles, but transforms their modes of application and consequences, while adding new rules to the game and constraining or even replacing the power of nation-states (Castells, 2001; 2009; Rodríguez-Prieto & Martínez-Cabezudo, 2016).

Informationalism and capitalism, both related to the concept of the network society, have since its inception constituted a decisive volume of capitalist production worldwide. This effectively initiated an era in which their hegemonic functions and processes would be organised around networks, in which the power of flows takes precedence over the flows of power: a society characterised by the predominance of social networks over social action (Castells, 2000; Benkler, 2015). Society as a whole systemically assimilated the digital context of the network: digital activity came to pervade leisure, work and social relations. Its immaterial basis facilitated cognitive capitalism, a global economy that abandoned the *objecthood* of commodities to embrace the symbolic, conceptual and cultural fabric of equally commodified content (Cunningham, 2015; Moulier-Boutang, 2004).

Contemporary culture in globalised contexts is characterised by a form of production reflecting the growing relationship between production investment costs and the distribution of raw materials and commodities that are now symbols, codes, signs or skills subject to the logic of permission culture (Blondeau, 2004; Míguez, 2018; Seat, 2017; Martinez-Cabezudo, 2014; Lessig, 2005). In this fusion of materiality and immateriality, which blurs the line between representation and presentation (i.e., between spectacle and life), we can discern the social and political-economic framework known as bioinformational capitalism: an emerging form of capitalism that is self-renewable, that can change and transform the material basis of life and capital, and that can program itself (Peters, 2012; Peters, 2022). Any dynamic that generates knowledge and/or culture, whether through its management, organisation, consumption or production, is subject to the framework described above. In this conceptual context, the postdigital perspective offers a working approach that could help us to understand, criticise and alter the framework itself.

2.2. Postdigital: introduction to the concept

"Postdigital" is another of the "post" terms used in sociology, as Ana Mae Barbosa (2019) points out, to describe a present-day context that has no name of its own and so is designated by means of a prefix that alludes to the past. Decades ago this prefix was adopted as a cultural label, plucked from its purely grammatical usage to be established as a concept in the territory of cultural theory (Villamil-Pineda et al., 2019). Its semantic evolution is related to critical perspectives on culture associated with different analytical approaches: posthistoricism (Danto, 1999), poststructuralism (Rowe, 1979), posthuman (Braidotti, 2015), postmodernity (Lyotard, 1998; Vattimo, 1994), and more recently, postdigital (Sinclair & Hayes, 2019).

This prefix cannot be analysed in semantic terms limited exclusively to its grammatical application and its common meaning of "coming after," a fact that becomes clear if we compare its use in the concept "posthistoricism" with its function in the constantly redefined notion of "postmodernity." The first, according to Arthur Danto's development of the concept (1999), is associated with the power of the artist in the late twentieth century to make any type of art without it having to be defined by the specific time or geocultural context in which it is made. However, in the term "postmodernity," the

prefix is located in territory that is predominantly semantic and spatial rather than temporal (Tudela-Sancho, 2001). In this case, drawing on the reflective analysis of postmodernity offered by Gianni Vattimo (1998), the prefix can be defined not so much as an instance of overcoming, but as a farewell to values. Different meanings can also be found in other concepts that make use of the "post" affix. In the case of the term "postdigital" the meaning is closer to those of postcommunism, postfeminism or postcolonialism, in which the prefix is understood to refer to a continuity of ideas latent in the notions associated with the lexeme it precedes, while at the same time, as Cramer (2013; 2015) argues, going beyond them.

The basic premise is that rather than describing a chronological demarcation (a situation occurring *after*), the postdigital, as Michael A. Peters & Tina Besley (2019) point out, is associated with an attitude critical of digital logic (Jandrić, 2017), an analysis of its construction, its theoretical orientation and its consequences based not only on an application of social theory and hyper-control theory, but also on culture and aesthetics (Tavin, Kolb & Tervo, 2021; Seat, 2019a; Martin-Prada, 2017). In other words, the principles of this critique of the digital are intertwined with the critique of an entire cultural logic underpinned by a way of looking at and understanding the context we inhabit, a context that today is shaped by digital dynamics and rationales. This cultural logic is a concept tied to the idea of the hegemonic norm (Jameson, 1991; 1996), and which is always founded on the available cultural representations. These representations involve symbolic action (Geertz, 1990) and are taken as basic assumptions of the cultural logic. In other words, they constitute the system of reasoning behind the events and intentions of the participants in a given context, which is in turn a collective organisational process that draws semiotically, conceptually and interpersonally on those same or similar assumptions when interpreting the actions of the subjects (Enfield, 2000).

2.3. Biopolitics, culture and knowledge: a postdigital perspective

It is impossible to ignore the relationship between the postdigital perspective, the bioinformational context of cultural practices and the application of biopolitics. Since the emergence of digital technology, contemporary immaterial production has been the driving force behind the idea of work today. This kind of production spills over the borders of the traditional conception of the economic to engage with a broader field of action that includes the cultural, the social and the political (Mota, 2021). What is produced is not just material goods but social relationships and forms of life (Hardt & Negri, 2004). This is what Michael Hardt and Antonio Negri, drawing on Foucault's terminology, refer to as biopolitical production: products embedded in immateriality that directly affect social life in its entirety (Hardt & Negri 2004: 124). It is important to clarify that the concept of biopolitics referred to here is distinct from Foucault's notion, which focuses on governance through biopower and on the ways of regulating the population and the disciplines of the body as a means of organising life (Foucault, 1996). In contrast, Hardt & Negri (2004) focus their conception of biopolitics on its nature as a knowledge producer and how the network and informational and communicative norms are established as the hegemonic mode of organisation. Biopolitical action puts *bios* to work without consuming it. Moreover, its product is not exclusive, because sharing knowledge does not reduce the sharer's capacity to use it, but quite the opposite: the exchange of ideas and affects actually increases their capacities (Hardt and Negri, 2009).

Based on the idea of biopolitical action outlined above, this paper posits the following hypothesis in relation to the digital reality we inhabit: the digital revolution is over. This thought-provoking idea, proposed as early as the end of the twentieth century by the controversial founder of the MIT Media Lab, Nicholas Negroponte (1998), serves to highlight a fact that we accept without thinking about it: in our world today, technology is taken for granted. In other words, digital technology is no longer noticeable for its presence, but only when it is absent do we realise its vital importance in our lives. Studies of the postdigital are positioned in this territory where society acknowledges the blurred relationships between offline and online worlds, the physical and the biological, the old media and the new, humanism and posthumanism, knowledge capitalism and bioinformational capitalism (Jandrić et al., 2019; Berry, 2014; Fuller and Jandrić, 2019). Our world is turning into a postdigital biosphere, a hybrid environment of digital and non-digital spaces where we live our lives, and where we engage in biopolitics, because communication, information, culture, emotions and knowledge in general cannot be separated from the networked organisation of our reality or its biotechnological structure (Peters, Jandrić and Hayes, 2021). It is at this intersection that we find elements of relevance to our definition of the concept and its relationship with the analysis of the contemporary cultural logic. To this end, two key ideas need to be defined: virtuality and cultural transcoding.

The concept of virtuality is defined here based on its characterisation by Pierre Lévy (1999), who distinguishes between *actuality*, what actually happens, and *virtuality*, what happens potentially. The digital context is virtual because it is a space and time with different potential probabilities (although all are pre-programmed) that will be *actualised* through the interaction of the user (who acts freely and intuitively, outside the logic of the pre-programming). This idea of potentiality and pre-programming is

key to understanding postdigital practices and their critical action in our world. This creates a contextual space where digital technology and the media can no longer be separated from social and natural life (Jandrić et al., 2019) in an exercise of ontological remixing of social, cultural and technological worlds (Escaño, 2019b). In our era this context is systemic, anchored at the bio-digital intersection, straddling the blurred boundaries between the concepts of "inside" and "outside" the digital. It is a system embedded in Industry 4.0, whose objective is the programmatic planning of society in its entirety, orchestrating psychological impulses to redefine our on- and off-screen behaviours (Peirano, 2019).

Big data entails a business model (4.0) based on the bioinformational organisation of large swathes of data on user behaviour by means of digital technology, facilitating the development of an exhaustive predictive analysis based on business intelligence, data science and the use of advanced statistics (Chaudhary, Pandey & Pandey, 2015). This calls into question (or at least heavily conditions) the free will that the user is presumed to have.

A few decades ago now, Herman & McChesney offered convincing evidence of the concentration of power and control of international media systems into the hands of a few major transnational corporations, such as Time Warner, Disney, News Corporation, Viacom and Bertelsmann (Herman & McChesney in Tomlinson, 2001). In the media system today, the digital giants Apple, Microsoft, Alphabet/Google, Amazon, Alibaba, Tencent and Meta have carved out a huge space for themselves, rising to the highest levels of financial and social power (Statista, 2022; Newfoundland, 2022). These multinationals are the exponents of the 4.0 network of economic activity.

This global digital organising system, capable of examining and identifying where we are, who we are with, when we are, and what we do, serves the economic and political interests of a handful of corporate giants. It would not be possible to organise an analytical framework of such magnitude without a well-articulated pre-programmed design: studying the steps taken as a result of one stimulus or another, identifying the attitudes adopted when certain information is offered, or provoking certain reactions through different messages. This virtualisation through digitalisation is the modus operandi of Action 4.0, enabling a sociology of digital politics whereby we can examine the role and influence of digital technologies in society more broadly, and in knowledge generation policies in particular (Williamson, 2021).

The principle of cultural transcoding, on the other hand, is what Lev Manovich (2005) argues is the most significant consequence of media computerisation. The new media consist of two distinct layers, each of which influences the other: the cultural layer and the computer layer. The computer layer affects the cultural layer as, in a sense, the computer modulates our environments, shapes our world when it represents our contexts with data and allows us to work with them. The cultural layer and the computer layer are integrated into a composition, resulting in a new cultural product resulting from the fusion of inherently human meanings through emerging digital data determined by a machine for their representation.

The postdigital is a consequence of this interaction, where dimensional layers hybridise and intersect. Added to this is the intermixing of the technological spaces where digital and analogue technologies come together (Peters, Besley and Jandrić, 2018). The postdigital thus becomes an unpredictable phenomenon that is hard to define, simultaneously virtual and actual, which can only be explained by this unification of digital and analogue, technological and non-technological, biological and informational, rupture and continuity (Jandrić et al., 2019; Contreras-Kortebay & Mirocha, 2016) .

However, although the postdigital makes no distinction between "old" and "new" media, its fusion of and immersion in both provides us with a space for re-investigation and reuse (Andersen, Cox & Papadopoulus, 2014), an exploratory space where the new media are at the heart of the redefinition of culture and society. The digitisation of everyday life and politics are responsible for the immaterial nature of culture, for its advent and development. As Remedios Zafra (2010) points out, we must always remember that the machine is never neutral and that as it develops it generates subjective models and identities for its era. Technology and the new media are not objective but play an active role in the construction of our socioculture. They are participants in the definition of the contemporary cultural episteme, which is associated with a techno-economic base.

2.4. Teaching approaches in contemporary digital contexts: an outline of postdigital critical pedagogies for a post-COVID-19 era

Media education today is marked by dynamics of control and power similar to those foreseen by Lyotard (1998) in the 1970s in relation to the construction of knowledge and the articulation of its legitimacy: the best-equipped laboratory will be able to impose its ideas. The difference is that today the best laboratory is totally outside the academic world, in the hands of the industries that produce and manage immaterial labour (WEF, 2016). These industries influence and shape a multifactorial,

ubiquitous and complex digital context that has replaced all technology prior to the twenty-first century for creating, storing, distributing and accessing cultural objects (Manovich, 2013).

In the context of the pandemic, it is clear that educators in general were compelled to switch to online teaching in a forced, fast and difficult transition. Most of these educators were not prepared for the kind of teaching required for the complex, ubiquitous and multifactorial digital environment, as they lacked the training and information necessary to tackle the task (Dos Santos Santiago Ribeiro, Scorsolini-Comin & Dalri, 2020; Fernandez, 2020; Arancibia, 2020). This situation would be inconceivable in any other field of pedagogical knowledge, such as languages, exact sciences or experimental sciences, which are taught by specialists who at the very least have been required to learn their content.

In the interests of understanding this context, a brief explanation is needed here of the reality of the digital competencies of teachers at the time the pandemic struck and in the subsequent period of development towards a process of social normalisation. This explanation is based on studies carried out by Tejedor et al. (2020) and Mora-Cantallops et al. (2022) on the perceptions and self-perceptions of teachers and students in Spanish universities. Although they cannot be directly extrapolated to other countries or academic levels, the results of these studies do provide us with relevant information as a case study. Noteworthy among the findings are that only 24.8% of Spanish students consider that their teachers have the necessary skills to design virtual teaching, 83.2% think that teaching was not adequately adapted to the digital setting, 65.6% believe that they received contradictory information and instructions during pandemic lockdowns, and finally, 49% of students surveyed gave their university a "failing grade" for the way it managed the impact of the crisis on teaching, while only 2.5% gave it an excellent grade. It can also be deduced from the reports that the COVID-19 pandemic has accelerated the processes of digital transformation and has highlighted the importance of having experts in technology and pedagogy on hand as professional support. In addition, the findings point to the need to maintain appropriate training to ensure continuing improvement of digital competence levels among teachers. In light of the data and the experience offered by the pandemic, it may be possible to develop a typological classification of teachers according to their relationship with the digital environment, based on the categories outlined below.

The first category would be of those teachers who for various reasons have not been trained to reflect and act in contexts of media pedagogy and who understand the digital environment as an instrumental action (Flores-Tena, 2019), a practice that at most would only ever complement and be subordinate to the "real" education that could only take place in their classrooms. This potential category would reflect the way that most education systems have responded to the digital age: by establishing walls, barriers and controls (Hartley, 2009). Teachers impose such measures of surveillance, limitation and inspection on something they view as external: the virtual space, which *is accessed* but is not really *in our world*. This category could be further subdivided into educators who implement these measures in a fully conscious way, usually due to incompetence or ignorance, suggesting that they are very probably *technophobes* as this pedagogical category is described by Burnett (2004), and teachers who apply it partially, usually due simply to lack of training. The former often describe themselves as "critics" of a system they do not really understand (because they have not taken the time study and explore it in depth), while the latter act out of ignorance and/or carelessness.

A second category, associated with what Burnett calls *technophiles* (2004), would be those teachers who naively embrace the digital environment as a panacea. Although they have not been trained in critical reflection on contexts of digital pedagogy, they also understand the use of the digital environment as a *de facto* instrumental exercise. However, their teaching practices involve dynamics assumed to be innovative for the mere fact that they are digital, as they use any digital technology uncritically without taking into account that such technology is a social, cultural and ideological construct.

Finally, a third category of teachers would be those who have taken the trouble to engage in both communicative and pedagogical training, action and reflection in digital education contexts, and who connect with educommunication and critical media education in order to tackle contemporary complexities and foster multiple literacies (Osuna-Acedo, 2009; Silva, 2008; Hoechsmann & Poyntz, 2012; Kalantzis, Cope & Zapata, 2019). These teachers understand the digital environment for what it is: an environment that cannot be understood through mere instrumental learning. Consequently, they recognise that digital pedagogy is pedagogy first and digital second, i.e., an educational act that involves bodies, identities, community relations and social constructions. For these teachers, digital education constitutes a non-transactional and materially liberating activity that is still connected to the tradition and development of critical pedagogies (McLaren & Kincheloe, 2008). This is a perspective based on the notions of Antonio Gramsci (1967; 1973) Ivan Illich (1971) and, of course, Paulo Freire (2007; 2017), articulating an educational strategy that also draws on the propositions of Henry Giroux (1988), Peter McLaren (1984); 1997), bell hooks (2021) and Paula Allman (1999), and the many other scholars who have contributed to the historical development of pluralist approaches to critical education.

In the contemporary context, critical pedagogies are also inescapably related to the analysis of the digital environment (Martínez-Arboleda, 2013; Farag, Greeley & Swindell, 2021; Jandrić, 2017). Connections between critical pedagogy and digitality reflect an interest in a form of learning characterised by its communitarian and social nature (Wenger, 2001), resulting in a form of media education based on dialogic models (Kaplún, 1998) that leverage the critical, participatory, collaborative and creative elements of these technologies (Hoechsmann & Poyntz, 2012; Gutierrez, 2010; Luke, 2018). Teachers in this category genuinely want to understand contemporary times and spaces and their political philosophies. They strive to understand the roles of all parties interacting in the socio-educational environment (Osuna-Acedo, 2010; Aparici and Osuna-Acedo, 2013) in order to move beyond the adaptation to the context, and to subvert, restructure and ultimately transform its political-educational flows. In this way they will be able to articulate a necessary solidarity based on social, educational and cultural interdependence (Osuna-Acedo & Escaño, 2016; Mañero, 2020; McLaren & Jandrić, 2020), a strengthening of the commons, and the promotion of intercreativity and of broad, collaborative and democratic relationships (Berners-Lee, 2000; Surowiecki, 2005; Osuna-Acedo et al. 2016; Mentasti, 2021). This will result in what could be referred to as postdigital pedagogies: knowledge and actions that engage with digital culture from a perspective based on critical analysis of the bioinformational system that sustains it, where social and economic relationships are defined by a network that is manifestly bio-digital (Knox, 2019).

Postdigital pedagogies don't just represent worlds but also build them. They will always be pluralistic, acknowledging the intersectional complexity between scientific and humanistic fields and their educational pro-communal nature (Arndt et al., 2019). These pedagogies recognise that the digital space is also material (Jandrić in Freedman & Escaño, 2022), that bodies have not been eliminated but simply relocated, that our feelings and emotions (Massumi, 2015) are real whether outside or inside the network, that as individuals we are influenced, altered and shaped by a context—always physical, whether it is digital or non-digital—that is transcendent and conditioning (Haraway, 2008; Barad, 2007; Seat, 2022), and that this context weaves technology and life together to enable a posthuman space, articulated by what Deleuze and Guatari (2019) describe as affects, prospects and concepts.

3. Conclusions: some considerations for postdigital education

A thoughtful, critical reflection on education today is essential for the development of a pedagogical approach that can provide an answer to Chomsky's question. It is a question that challenges us in times of crisis, in the midst of a depression that is not the product of the pandemic alone, but part of the series of social crises described by Luis Camnitzer. In short, the key to the answer to Chomsky's question will not be found instantly in the latest article on current educational technological innovations indexed in the *Web of Science*; instead, we need to turn to the conceptual approaches proposed by Gramsci and Freire, with their critical, counter-hegemonic action against the kind of transactional practices common to both digital and media education. These are approaches with more than half a century behind them, and they are neither paradoxical nor anachronistic, as all educational activity should be geared towards the production of knowledge, values and social justice, eschewing the purely hierarchical transmission of ideas that only reproduce inequalities, a practice which unfortunately is not limited to the digital dimension.

In any era, the fundamental task of education should not be founded on an understanding of students as mere receptacles into which we *pour* instruction through the hierarchical transmission of content (whether digital or otherwise) in the expectation that, as Chomsky suggests, we can get something out of them. Any educational strategy should focus on efforts to close social gaps, whether those gaps are material, class- or skills-based, gender or digital. In this sense, if the focus of a digital pedagogy perspective is not genuinely geared towards education and its objective of closing gaps, the digital environment will merely reproduce the pedagogical defects of face-to-face education.

Educators in the digital context need to ask themselves why and for whom they are educating. They should also reflect on their context *outside* the digital, because that context will never really be *outside*: there is no place or time that is not explicitly or implicitly associated with the network society. The network is not just a digital space, and as such, it is not merely representation and appearance. Today our bodies are *in* the network, shaped by it. Our bodies are *networked*, forming part of it. They are not appearance; they are *presence* on the network. An educational approach that keeps its focus on the present needs to acknowledge that the network itself forms part of our pedagogical activity, that more than merely conditioning it, the network shapes, influences and alters it, just as the classroom desk shapes, influences and alters our body, the blackboard and chalk organises, directs and articulates our gaze and attention, and the four walls of the classroom delimit our freedom and our relationships. If we read the digital context merely as an independent and autonomous habitat, our diagnosis will be erroneous. We need interdependence because our growth and evolution are based on emotions, community and contact with our peers. The network is not only a digital network, the one constructed with binary code; it is also (and above all) what underlies that digital network: the materiality of a society of interrelated people.

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