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1. Author information

Elena Gremigni

Department of Political Sciences, University of Pisa, Italy

2. Author e-mail address

E-mail: elena.grem@tin.it

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Overcoming New Forms of Digital Divide: Some Remarks on the Need for Media Education

Elena Gremigni*

Corresponding author:
Elena Gremigni
E-mail: elena.grem@tin.it

Abstract

Recent studies have proved the emergence of new forms of digital divide, related to users' socio-economic background, that limit the possibilities of a proper and conscious use of ICTs. In order to overcome digital inequalities, simple skills assessed by the European Computer Driving Licence are not sufficient as the necessary digital competences consist rather of users' ability to achieve specific offline outcomes and reflect on the deep mechanisms that regulate the organisation of the Internet. The Network Society implies old and new forms of exploited labour and reveals its belonging to a cultural industry where users are consumers and producers (prosumers) at the same time. This 'third job' goes far beyond the exchange for the services offered, and the pleasant entertainment hides forms of abuse. Users' behaviour is a commodity under the guise of information that generates wealth for third parties and may negatively affect the lives of unaware people.

This paper uses the 'clue paradigm' in order to identify some 'traces' of the third-level digital divide both in 'mass' adhesion to the most popular social network sites and in the limited use of educational software. The outcomes of a qualitative study conducted in Italy among some students and teachers highlight the need for media education that is not just training to improve technical skills.

Keywords: digital divide, prosumerism, media education.

1. Introduction: 'third-level' digital divide and 'third job'

At the beginning of the Internet age, researchers pointed out the critical issue of the digital divide between those who accessed ICT infrastructure and

* Department of Political Sciences, University of Pisa, Italy.

those who had no means to do it, being left without the opportunities offered by virtual reality (Bauman, 1999; Castells, 2001; Norris, 2001).

Although this first-level digital divide still exists in some areas of the planet and even in Western countries, sometimes in the form of 'bandwidth divide', the following studies have highlighted the emergence of other forms of digital divide. Second-level divides concern skills and types of activity performed online as it was soon evident that having access to the Internet was a necessary but not sufficient condition to be able to use it (Bentivegna, 2009; Bracciale, 2010; Cruz-Jesus, Oliveira, Bacao, 2012; Gui, Argentin, 2011; Hargittai, 2002, 2008, 2010; Hargittai, Hsieh, 2013; Heinz, 2016; Helsper, Reisdorf, 2016; Iannone, 2007; Mascheroni, 2012; Tsatsou, Pruulmann-Vengerfeldt, Murru, 2009; van Deursen, van Dijk, 2009, 2011, 2014; van Dijk, 2005, 2012). These studies have drawn attention to differences in users' proficiency in finding digital resources for the achievement of specific aims and have found out that individuals with similar skills may not achieve the same results from their Internet use. The volume and the composition of the available economic, cultural, social, and symbolic capital are factors of major importance regarding the ability to use ICTs, and these digital tools end up reproducing or even increasing existing social inequalities (Bracciale, Mingo, 2015; Hargittai, Hinnant, 2008; Helsper 2012; van Deursen, van Dijk, Helsper, 2014; van Dijk, 2005; Zillien, Hargittai, 2009). Unlike those who are in a dominant position, users who come from a disadvantaged socio-economic and cultural background encounter many difficulties in improving their status by using resources made available on the Web. Alexander van Deursen and Ellen Helsper have recently identified a third level of digital divide exactly in relation to the ability to get an advantage or not in everyday life from an appropriate use of the Internet. According to these researchers 'third-level divides [...] relate to gaps in individuals' capacity to translate their Internet access and use into favourable offline outcomes' (van Deursen, Helsper, 2015: 30).

Generally, all forms of digital divide are related to users' socio-economic background, but nowadays research demonstrates that being able to use ICTs does not imply the overcoming of digital inequalities. As a matter of fact, the most connected people on the Internet who suffer from 'information overload' (Levitin, 2014) or 'permanent communication overabundance' (Gui, 2014) are those who come from disadvantaged families.

Digital competences required to remove high-level divide are not the simple skills assessed by the European Computer Driving Licence (ECDL) (Calvani, Cartelli, Fini, Ranieri, 2008). Even the new version of the licence does not seem to assess the competences that are recommended by the update process of Digital Competence Framework for Citizens 2.0 and 2.1 (DigComp 2.0, DigComp 2.1), which is one of the European Commission's priorities in

order to enhance social inclusion (Vuorikari, Punie, Carretero, van den Brande, 2016; Carretero, Vuorikari, Punie, 2017). High level of digital competences rather refers to users' ability to reflect on the deep mechanisms that regulate the organisation of the Internet in order to achieve specific offline outcomes and avoid being turned into mere cogs of ICTs.

As Christian Fuchs argues, Silicon Valley dreams hide nightmares of exploitation (Fuchs, 2014). If on the one hand the Network Society is grounded in old forms of exploited labour – such as the extraction of minerals in African mines, ICT manufacturing in China, software engineering in India, all service centre work –, on the other hand, it implies new forms of exploited labour that are far less visible (Fuchs, 2014, 2015, 2016).

Some years ago, when users surfed the Web mostly through nicknames, a famous cartoon published in the US magazine *The New Yorker* showed two dogs praising the qualities of ICTs because 'on the Internet nobody knows you're a dog'. Nowadays, as Pariser says, 'the new Internet doesn't just know you're a dog; it knows your breed and wants to sell you a bowl of premium kibble' (Pariser, 2011: 6). Although anonymity online is formally surviving (just think of Sarahah), it has been virtually eliminated when the authorities in charge of social control and, above all, entities like Google, Facebook, and the NSA have improved the ability to trace every activity performed on the new Web.

By profiling users, algorithms are able to assign their gender, age and other information that means they are able to create their social identities with great accuracy and limit their freedom within a surveilled and algorithmically-constructed world (Cheney-Lippold, 2017).

Moreover, it is clear that the more people's tastes are known, the easier is the task of selling them the products they like. The spreading of Facebook, in particular, has gone far beyond the problem of finding information about users' tastes and interests, by asking them directly. Through elementary actions (such as sharing a link posted by others, or clicking on the 'Like button'), users create their own profile of consumers with a completeness of information greater than the one allowed by traditional market research (Six, Lasky, Fletcher, 1998). This 'Big data' – also collected by other companies, which in some cases produce spyware and spam for this purpose (Wright, Gutwirth, Friedewald, Punie, Vildjiounaite, 2008) – is being sold to multinational corporations that have been organising personalised marketing campaigns for a long time.

By leveraging the needs of building an identity and establishing relationships, the main companies that offer services on the Internet tend to steer users toward preformed contents and forms of standardised behaviour, leading to the adoption of collaborative attitudes.

Karl Marx first highlighted the tendency of the capitalist system to

incorporate the consumer within itself. First of all, production is not limited to supply products that meet demand, but it also creates the need of commodities. 'Production thus', Marx wrote in the *Grundrisse* (1857), 'produces not only the object of consumption but also the mode of consumption, not only objectively but also subjectively. Production therefore creates the consumer' (Marx, 1857, Engl. transl. 1986, vol. 28: 29).

Marx asserts that production produces 'not only an object for the subject, but also a subject for the object' (Marx, 1857, Engl. transl. 1986, vol. 28: 30). Nevertheless, the consumer does not just play a passive role. Above all, the consumer is an active subject that leads the production cycle to the end: 'by dissolving the product, gives it the *finishing stroke*, for [the result of] production is a product not merely as objectified activity, but only as an object for the active subject' (Marx, 1857, Engl. transl. 1986, vol. 28: 29).

This attitude of the capitalist economic system to use humans in the process of valorising capital is nowadays even stronger, to the point that the term 'biocapitalism' (Sunder Rajan, 2006; Codeluppi, 2008) has been spreading in order to better highlight the ability of contemporary capitalism to produce value using all men's biological components (body, mind, needs, and so on). The biocapitalism exploits people not just in their workplaces, but also in their free time. As a consequence, production and consumption are not two easily distinguishable phases, because the consumer is induced to manage activities that generate economic value even outside the workplace. Companies save money by imposing some operations on the consumer (for instance, it is the case of the self-service checkout units in supermarkets) and the tendency to transform the consumer into a producer of information and symbolic contents that are particularly valuable for companies is increasing. Alvin Toffler created the neologism 'prosumer' (synthesis of producer and consumer) just to denote the traits of this particular figure of producer and consumer who has been playing a decisive role in the global economic system during the contemporary age (Toffler, 1980).

On the Internet, the prosumer phenomenon emerges clearly (Bartoletti, Paltrinieri, 2012; Boccia Artieri, 2012; Bruns, 2008; Paltrinieri, Degli Esposti, 2016; Ritzer, Jurgenson, 2010). If, on the one hand, social capital and social support on the new Web are important resources for users, on the other hand, the seemingly harmless request to increase the number of contacts on a social network site and the simple use of search engines and the most popular applications are devices that produce wealth for the private company that manages the web space. This unpaid 'third job' (Toffler, Toffler, 2006), which is added to the unpaid domestic work and to the paid work, occupies an increasing part of people's own time and privacy because it does not require a large commitment or a considerable expenditure of energy, and it does not

need to be done at home. The value of companies increases with the complicity of users who connect to the Internet in order to satisfy the need of socialisation or just some curiosity.

Market mechanisms that encourage people's innate inclination to stay in touch with their own peers through ICTs, and the consequences resulting from belonging to virtual social networks, remain invisible to most users. It is still not well known, for instance, that some banks are starting to use the information contained on social network sites to decide whether or not to grant a loan. The reliability of a customer is also assessed in relation to his/her contacts on the Web, and if among his/her real or virtual friends there is someone who, by chance, has had trouble in making the mortgage payments, it is most likely that the credit application will be rejected rather than accepted (Pariser, 2011).

Reducing the complexity of reality to a simple algorithm based on the principle of induction has had important consequences on users' lives as a result of their own unwitting complicity. Therefore, it is strictly necessary to promote an informed and conscious use of ICTs, by unveiling the hidden mechanisms of the Internet.

The pilot study presented here and recent extended research show that much remains to be done in order to avoid uncritical or addictive uses of the Internet that can lead to many problems and require appropriate care and intervention (Beranuy, Oberst, Carbonell, Chamarro, 2009; boyd, 2014; Christakis, Moreno, Jelenchick, Myaing, Zhou, 2011; Grant, Potenza, Weinstein, Gorelick, 2010; Gui, Fasoli, Carradore, 2017; Lee, Chang, Lin, Cheng, 2014; Lepp, Barkley, Karpinski, 2014; Lu, Watanabe, Liu, Uji, Shono, Kitamura, 2011; Lutz, Ranzini, Meckel, 2014; Mai, Freudenthaler, Schneider, Vorderer, 2015; Rosen, Cheever, Carrier, 2012; Spitzer, 2015; Tison, Chaudhary, Cosgrove, 2011; Turkle, 2012, 2016).

However, government schools are the best environments where teenagers can be educated in correct uses of ICTs and all the forms of digital divide that still remain also in Italy can be reduced.

2. Italian schools and ICTs

In order to meet the needs of a globalised market, since 2006, the European Union has included 'digital competence' among the eight key competences for the Lifelong Learning Program (European Council, 2006). As a consequence, for a relatively long period of time ICTs have been being used increasingly in school systems for educational activities, staff and students' bureaucratic and administrative management and practices related to formative

and summative assessments (electronic registers, memos, grading meetings).

Nevertheless, in Italy the new information technologies have so far been used only sporadically in teaching, due to the lack of adequate resources (Giusti, Gui, Micheli, Parma, 2015; Gui, 2010; Ranieri, 2011; Vivanet, 2013). The new National Digital School Plan (PNSD) (Law n. 107/15; Ministerial Decree n. 851/15; MIUR, 2015b) aims at increasing the investments made in the past under the previous Digital School Plan. Many actions have been planned in order to create online platforms, purchase Interactive Multimedia Boards, spread broadband connections, replace paper books with ebooks and so on. This 'Italian way' to digital literacy is based on the central role of an ICT-educated teacher, a 'digital entertainer' (Ministerial Decree n. 435/15) able to promote didactic innovation in each school, who should completely transform the old way of teaching.

However, the will to carry out radical changes in this direction does not yet seem to have taken into consideration the need for a clear educative plan focused on a conscious use of the digital tools related to the purposes of public education. Although the PNSD do not mention the outdated expression 'digital natives' (Prenski, 2001a, 2001b)¹, by reading the ministerial text it seems that students already have the tools to orient themselves in the digital world and the introduction of technological innovations at school represents in itself an improvement in teaching activities.

As a matter of fact, the issue is more complex and some international researches are beginning to show data that raises doubt about the positive impact of ICTs on learning (Gorlick, 2009; Gui, 2014; OECD, 2015; Ophir, Nass, Wagner, 2009; Stothart, Mitchum, Yehnert, 2015; Wang, Tchernev, 2012; Wood, Zivcakova, Gentile, Archer, De Pasquale, Nosko, 2012).

Furthermore, it is undeniable that hardware and software have been transformed more and more into tools focused on a rapid fulfilment of needs which encourage forms of consumption, instead of educational practices. In the same way, the ergonomics of smartphones and tablets is oriented in this direction and users seem to have been deceived into believing that no special technological skills are required to use these products (Casati, 2013).

In order to examine in depth the results of some statistical surveys of the Ministry of Education (MIUR, 2015a) and ISTAT (2014, 2016) on the use of ICTs by Italian teenagers, a research study was carried out on Italian students and teachers. The aim of this small study, based on the so-called 'clue paradigm' (Ginzburg, 1979), was to identify some 'traces' (Benjamin, 1927-

¹ On the 'digital natives debates' see: Bennett, Maton, Kervin, 2008; Buckingham, 2006, 2007, 2008; Bullen, Morgan, Qayyum, 2011; Fini, 2011; Gremigni, 2012; Hargittai, 2010; Livingstone, 2009; Selwyn, 2009.

1940) of a tendency towards a restricted and unaware use of the World Wide Web, by comparing the ‘mass’ adhesion to the most popular social network sites with the limited use of educational software.

3. Remarks on students’ digital literacy: a qualitative research

3.1. Students’ answers

The research on the use of ICTs among secondary school students was carried out primarily through a short survey addressed to some teenagers.

A sample of 82 students aged 16 to 19 years – who attended three different secondary school programs in Livorno (Human sciences, Foreign languages, Applied sciences)² – was selected, by using a non-probabilistic sampling, which was considered preferable because of the margin of error originated by the need to work on a limited number of cases (Cardano, 2003). Although the sample was not statistically significant in order to handle the data from a quantitative point of view³, it was considered appropriate to administer to students some multiple choice questions and a few open answer questions so as to better understand their points⁴. The questionnaires were identified by a progressive number and a code corresponding to their class.

What emerged from this data confirmed teenagers’ tendency to be always online (ISTAT, 2014; ISTAT, 2016): teenagers used to visit social network sites and to follow them several times a day, but they seem not to know that their activities are an unpaid job. Almost all students had a profile on Facebook and many of them also had an account on other social network sites such as Instagram. Moreover, they used to communicate through WhatsApp. Few teenagers instead had a profile on Twitter and Ask. The students interviewed affirmed they used to surf the Internet primarily in order to use social media, to download music, videos or movies, and to study. The new Web was used for online shopping and video gaming to a lesser extent.

The research outcomes showed that the electronic register was employed once a week on average to examine grades, and the educational software was used occasionally to download materials uploaded by teachers (about three out

² As the research was just a pilot study, it was considered appropriate to choose a school near the University of Pisa, which had different secondary school programs. As soon as possible, a new survey will be conducted with a sample of students across the national territory.

³ The sample should have been composed by more than one hundred students, but when the questionnaire was submitted some of them were absent. As a result, it was not possible to process data from a statistical viewpoint.

⁴ The survey was conducted in April 2016.

of four students accessed Moodle⁵ only once a month, and one out of five did not access it at all).

Generally, the students complained about the many difficulties they encountered in accessing the educational software and this seemed to be a sign of second-level digital divide: 'the secretary has made a mistake in writing my name' (VDLL_10); 'I have forgotten my password' (VDLL_15); 'I do not remember the email address I gave to the secretary' (VDLL_5); 'Although I enter the correct username and password, I cannot access Moodle' (VDLL_3). As a result, many students preferred employing other sources for studying. Almost all students used to consult Wikipedia, 'Studenti.it' and 'Skuela.net', the latter two being Italian sites where summaries and poor quality notes can be found. Asked about the reasons why most of them used mainly these sites, the students answered: 'I find there everything I need' (III ALL_12); 'I used them to expand on school topics' (III DSA_3); 'I know there are better sites, but I prefer using these ones' (III ALL_24); 'All students use them' (IV CSU_8).

Moreover, the students used to stop at the first page of Google results, and they seemed to have no knowledge of the mechanisms behind the search engine: 'the first published results are the most important' (IV CSU_20); 'The first ones are reliable because they are consulted a lot' (III DSA_5). Probably they did not know that Google's PageRank algorithm does not show the same results to all the users entering the same search query. The order of presentation of results and the quantity of data shown change according to the profiles that users have built during their previous web surfing. It is the so-called phenomenon of the 'Filter Bubble', highlighted by Eli Pariser (Pariser, 2011), which is originating invisible censorship that are based on algorithms and proceeding through technologically advanced forms of manipulation. The effects are relevant on an epistemological level because this invisible filter bubble tends to amplify the confirmation bias by creating virtual spaces suitable for users, where it is difficult to find information contradicting the starting assumptions or to meet people with different point of views. As a consequence, students might not find useful information in order to achieve positive offline outcomes (third-level digital divide).

Students' answers seemed to confirm what emerged from a recent survey of the Ministry of Education: 'when students use the Internet to carry out their homework they prove of being able neither to plan well and execute a research nor to evaluate the usefulness of information or the reliability of sources. [...]

⁵ Moodle is a free and open-source software based on pedagogical principles. It is used for blended learning, distance education, flipped classroom and other e-learning projects in schools, universities, workplaces and other sectors.

Italian students are “lost in navigation” more than the OECD average’ (MIUR 2015a: 11). The analysis of the answers clearly highlighted that almost all students, even those who came from low-income families, had accessed the Internet, at least via smartphones. Nevertheless, while on the one hand the primary digital divide seemed to have been largely overcome, on the other hand, a clear, though complex, correlation between socioeconomic background and difficulties in the effective use of ICTs emerged, as the data collected by other researchers (Gui, Argentin, 2011; Gui, 2015; Micheli, 2014, 2015, 2016; Buffardi, Taddeo, 2017) and by MIUR⁶ pointed out.

As a matter of fact, the teenagers of the Human sciences lyceum, which is attended mainly by disadvantaged students⁷, showed predominantly an uncritical use of the new technologies and the Internet. These students, mostly girls (25 out of 28), used to surf the Web mainly for staying in touch with friends and downloading music. The students also used the Internet for educative aims, but in a minor way, and they examined Moodle less frequently than students who attended other programs. While they were always and everywhere connected, they did not seem to be able to carry out in-depth researches on the Internet, due to the fact that they merely referred to Wikipedia, ‘Studenti.it’ and ‘Skuola.net’. Only one student had a blog, while in other classes attended by students with less disadvantaged backgrounds there were some teenagers, albeit a limited number, who had their own blog and demonstrated familiarity with ICTs.

This little research had no claim to represent the universe of Italian students. However, this first survey offered some food for thought and some clues that we considered useful to deepen through some interviews administered to a sample of teachers.

3.2. Some interviews with teachers

In order to know teachers’ point of view on the relationship between

⁶ ‘In Italy 92.9% of the disadvantaged students can access to the Internet (6.3 percentage points less than advantaged students) and they surf the Web 94 minutes per day (in the weekend; 7 min./d. more than the advantaged ones), but only 66.2% seek practical information (13% less than the advantaged ones), while 42% surf the Internet for gaming (2.2 percentage points more than the advantaged ones). In other words, the digital divide seems to have shifted from the difference in access to the ICTs towards the use that students make of them: the disadvantaged ones surf more for recreational reasons than the advantaged ones who also connect for uses of information and communication’ (MIUR, 2015a: 14).

⁷ The distinction among the educational paths (tracking) causes a selection based on students’ socio-cultural background, which implicates forms of real segregation. As a matter of fact, parents belonging to the upper classes tend to enroll their children in the best schools. It is the well-known phenomenon of ‘cream skimming’ (Benadusi, Fornari, Giancola, 2010).

students and ICTs, we opted for nonstandard semi-structured interviews, which seemed to be a particularly suitable methodology for achieving the objective of the research. This type of interview is indeed a very flexible tool that allows to interacting with people who are objects of research and to collect much more information than those that can emerge through other methodological techniques.

The teachers were selected on the basis of a theoretical sampling (Gobo, 2001), a method that allows researchers to justify the choice of the subjects in relation to their relevance according to the specific study objectives. The main properties taken into consideration for the definition of the sample design were the teachers' geographical location (for the sample to be as representative as possible of the various geographical areas of the Italian territory) and the program in which the teachers taught (for the sample to be as representative as possible of the various Italian programs, from vocational schools to lyceums).

Then, we proceeded to select and interview some teachers with special skills in ICTs, both by resorting to the network of interpersonal relationships, and by using the so-called 'snowball sampling'. This way we selected twelve teachers who currently teach in the North West, North East, Centre, South and Islands⁸. In order to protect teachers' privacy, the interviewees were identified by the initial letter of their name and by a letter corresponding to the geographical area where they teach.

Almost all teachers first complained about the lack of an adequate ICT infrastructure in their school (too few multimedia classrooms and Interactive Multimedia Boards, no broadband connection, and so on). Technical and vocational schools seemed to be less equipped than the other schools ('The Wi-Fi is too slow', T_S), which however still had many deficiencies.

In addition to a first-level digital divide, a second-level digital divide emerged distinctly.

With regard to students' digital skills, all teachers agreed that in most cases there was a lack of basic literacy. A teacher pointed out students' difficulties in the use of simple writing programs: 'apparently everyone knows how to use a personal computer... in practice, many students don't succeed in using it' (S_NO). Another teacher added: 'the level is much lower than what you would expect: sometimes they fare worse than the older, reluctant teachers' (C_I).

Moreover, the students who purchased paper books did not use the digital resources made available by publishers. It is likely that some students did not access these sites in order to study less, but the teachers interviewed

⁸ The interviews were conducted in May 2016 through the app 'Messenger'.

thought otherwise and they seemed to suggest it depended on lacks of high-level digital competence (third-level digital divide): ‘my students cannot even download the online version of the textbook’ (E_C). Anyway, it was impossible to carry on teaching by using resources that students did not know how or did not want to use.

The teachers also confirmed that most students had a profile on Facebook and they used to communicate through WhatsApp regularly, while they occasionally used electronic registers, mainly just to control their own evaluations and communicate them to their parents, who accessed to these records even less than their sons. As one teacher observed: ‘they use the electronic register to see their marks, and they use them just for self-celebration: if the marks are good, they send the screenshot to Mom through WhatsApp’ (M_I).

With some exceptions, mostly in the classical and scientific programs (‘my students create blogs and use Skype’, MC_S), an uncritical use of social network sites through smartphone apps seemed to prevail. Moreover, the spread of social media caused the end of the forums that were created on the Web pages of schools for educational purposes. As one teacher confirmed, ‘the digital media corporations marked the end of schools forums. Forums have ended up like the radio amateurs and the free radios in the 70s’ (L_NO).

Students did not seem to understand the reason why teachers preferred using open source software, sites without advertising, platforms specifically focused on teaching such as Moodle, or participating in European digital projects such as eTwinning. As a teacher observed, ‘despite the Web classroom, many students keep asking me: why don’t you send us the study material on Facebook?’ (S_C).

Moreover, teenagers generally took a long time to access educational platforms and they did it after numerous teachers’ requests. As a teacher said,

my students use the social network sites much more and much better than other platforms. I personally tried to use Moodle, but with poor results. [...] I also tried to use eTwinning, but, to be honest, with poor results too. I have fewer problems with emails or WhatsApp. I created class groups and I frequently communicate with my students in order to send them notes and sources that I think can be useful for their studies (M_S).

Other colleagues who used eTwinning reported to had led their students on the educational platforms during classes at school in the morning, having noted that very few students provided regular connections from home.

Some teachers, having tried in vain to use educational platforms (‘Let’s not beat around the bush: students aren’t attracted at all by new educational technologies’, S_C), by thinking that after all ‘the end justifies the means’,

ended up adapting themselves to their students' choices, by using the most popular social network sites such as Facebook ('I don't hide that I use Facebook in order to communicate with my students', M_S).

The presentation of the personal profile as a 'social showcase' (Codeluppi, 2007, 2009, 2012; Tirocchi, 2011) was widely used by the students ('my female students do nothing but take "selfies" with their mouth like a chicken's ass to post them on Instagram', M_I), and students often did not seem to be able to fully understand that the permanent nature and the traceability of photos and information entered on the Web could lead to many problems (for instance, often employers analyse Facebook profiles in order to choose their employees, or to dismiss them). As a matter of fact, social network sites seem to be places of narcissistic exhibition like the television screen analysed by Bourdieu (Bourdieu, 1996) and constitute a market in which the users themselves are willing to assume the 'showcase-quality of thing' ('Schaufenster-Qualität der Dinge') (Simmel, 1896), being perfectly integrated into a neoliberal model.

On the contrary, students were very reluctant to use a photo or a simple image as an avatar on educational platforms ('very few students have uploaded an image for their profile on Moodle', S_C; 'no pictures on Moodle', M_S). Therefore, educational platforms seemed to be perceived as space where people were not commodities to be shown, but also, for this reason, these software applications were considered boring and they were used as little as possible.

The teachers interviewed confirmed that disadvantaged students had more difficulties in using ICTs in an active way, and this phenomenon was particularly noticeable in vocational schools and in Human sciences lyceum, attended by teenagers whose parents had a low level of education and a low income.

Despite the efforts to overcome old and new forms of digital divide, nowadays the Italian school system seems to be able to do very little against the trend toward students' uncritical use of commercial digital applications. Most parents encourage this tendency by buying their sons popular smartphones with standard apps, and the risk is that even some teachers end up adapting to the global digital market.

4. Concluding observations

The World Wide Web, being a powerful instrument of learning within the so-called 'Knowledge Society' (European Council, 2000)⁹, has assumed a

⁹ On the 'Knowledge Society' see Pastore, 2009, 2015.

central role in the social construction of reality.

The Network Society offers the indubitable advantages that result from the possibility of having access to a world of information. However, it does not seem to be able to circumvent the limits caused by the socio-economic contexts that define the main mode of use of the Internet. ICTs show a close relationship with the dynamics of the capitalist mode of production, a system that has maintained its purpose in the transition to the 'Information Age' (Castells, 1996). The continuous creation of new consumption needs fosters the spreading of leading brands rather than lesser-known ones and, in the same way, proprietary software prevails over open-source alternatives. Direct advertising campaigns are supported by forms of symbolic violence that induce users to adapt to the choices of the majority in order to strengthen their social networks.

Instead of providing free information, the commercial side of the Internet often subliminally guides users in their surfing and exploits users. On the one hand, much personal data is collected on the Web by companies profiling customers and prospects to the point that they seem to know users' identities better than users know themselves. On the other hand, net surfers by attempting to strengthen their identities in crisis during the age of 'liquid modernity', internalise commercial attitudes and widely display themselves and their bodies as if they were desirable and saleable commodities (Bauman, 2007). As literature has shown, users act in an area they consider their 'proscenium', but often they do not hide the 'backstage' (Goffman, 1959), creating a virtual hybrid space in which the distinction between public and private life becomes increasingly blurred (Bauman, 2000; Capecchi, Ruspini, 2009; Cappello, 2009; Meyrowitz, 1985) with consequences on real life they do not clearly understand.

Teenagers are particularly vulnerable to these mechanisms of social network sites as they need a social consensus in order to construct their identities in formation. Even when they have high-level skills in using digital applications, they show they do not have sufficient critical tools to understand in depth Web marketing strategies and their role as prosumers.

The research outcomes presented here highlight the existence of second and third-level digital divide at school. As a matter of fact, commercial social network sites seem to be the only popular software among students, while the most used educational software applications are not considered interesting virtual environments because they do not focus on socialisation aims and are related to scholastic duties. Above all, educational software seems to have no appeal as it does not indulge in any form of exhibition and is far removed from any form of market logic.

The recent National Digital School Plan arises from the need to overcome some forms of digital divide that are current in Western countries,

these include the divide in infrastructure, the bandwidth divide and the “digital divide” between in-school and out-of-school use’ (Buckingham, 2007: 96). However, it relegates to the background or disregards other forms of digital divide that concern the so-called second and third-level digital divide. Although it is untimely to evaluate the effects of the PNSD, the MIUR project seems to move in the direction of adapting the school to the current use of ICTs without promoting proper critical reflection. As a consequence, education might risk adapting to a world colonised by the most popular digital media devices (Casati, 2013).

What emerges from recent studies and from the research presented here is clearly the need for integration between formal education and students’ digital experiences (Cappello, Ranieri, 2010; Cappello, Felini, Hobbs, 2011; Ferreira, Ponte, Silva, Azevedo, 2015). However, in order to overcome this gap, it is fundamental to offer media education that is not just a training to improve technical skills but a critical reflection on ICTs and their proper use (Baacke, 1997; Calvani, 2007, 2010; Calvani, Fini, Ranieri, 2010; Cappello, 2017; Farné, 2010; Hobbs, Jensen, 2009; Jenkins, 2008, 2009; Morcellini, 2004; Morcellini, Cortoni, 2007; Potter, 2014; Rivoltella, 2001; Rivoltella, Ardizzone 2008; Scarcelli, 2017; Tirocchi, 2013).

As a consequence, the enormous educational potential of the analogic model should be protected, in order to foster the cognitive processing of information found on the Web and the active participation in the construction of knowledge. This is the only way for students to acquire greater awareness and avoid falling prey to opaque business interests.

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