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ARTIGOS

Open Education, Media Literacy and MOOCs: Issues for teaching practice, from the ecology of the media [1] [2] [3] [4]

Educação Aberta, Letramento Midiático e MOOCs: Questões para a prática docente, a partir da ecologia das mídias

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Abstract

MOOCs (Massive Open Online Courses) technology has become a prominent galaxy within the universe of open online education, especially after universities of the size of Harvard, Stanford, and MIT have invested millions of dollars in the creation of their platforms. Like any disruptive technology, MOOCs are still a volatile world, which requires thorough investigation and renew the discussion of the teacher's role. This text seeks to contribute to this debate, addressing four fronts. We construct a brief history of MOOCs to provide a structural view of the practices and contradictions inherent to the phenomenon. Next, we make a critical assessment of the scenario, confronting disputed discourses about the innovative character or not of massive open online courses and what academic research has discovered about the phenomenon. The evidence paves the way for a discussion about the "learning designer" teachers, who are necessarily skilled in media and information literacy. Once versed in the culture of MOOCs, it is up to them to decide if, how, and when to join the technology.

Keywords: Open Education, Media and Information Literacy, MOOCs.

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Resumo

A tecnologia dos MOOCs (Massive Open Online Course) tornou-se uma galáxia em evidência dentro do universo da educação aberta on-line, em especial depois que universidades, do porte de Harvard, Standford e MIT, investiram milhões de dólares na criação de suas plataformas. Como qualquer tecnologia disruptiva, os MOOCs ainda são um mundo volátil, que requer investigação apurada e renova a discussão sobre o papel do professor. O presente texto procura contribuir para esse debate, abordando quatro frentes. Foi construído um breve histórico dos MOOCs, de modo que se possa ter uma visão estrutural das práticas e contradições inerentes ao fenômeno. A seguir, é feita uma avaliação crítica do cenário, confrontando-se discursos sobre o caráter inovador ou não dos cursos abertos massivos online e sobre o que a pesquisa acadêmica de fato já descobriu sobre o fenômeno. As evidências abrem o caminho para uma discussão sobre o professor "designer de aprendizagem", necessariamente hábil em letramento midiático e informacional. Uma vez versado na cultura dos MOOCs, cabe a ele se, como e quando aderir à tecnologia.

***Palavras-chave**: Educação Aberta, Letramento Midiático e Informacional, MOOCs.*

Though not a new approach, the movement for open education gained momentum with the recent development of technologies, policies, and civil society initiatives, among them, the growth of "open universities", the popularization of open-coded software, open educational resources, and web 2.0 tools. Seeing as a whole, these initiatives broadened the access to education in different concepts, blurred historical barriers, and renovated the motivations to lifelong learning, in a context that has radically changed, from scarcity to the abundance of information.

As revolutions always bring problems, first, we have optimism and pessimism coexisting. Simultaneously, public policies, courses, materials, and publications incentivize educators to appropriate technologies to offer quality education at the pace demanded by the new generations of students. We have witnessed situations that led us to doubt the benefits of revolution: unprecedented vigilance, privacy invasion, blatant plagiarism, and the apparent loss of concentration abilities, so dear to learning.

In this limbo, this text intends to discuss an alternative route, connecting open education to media literacy, raising pertinent themes to teachers' professional development that, at the

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same time, enjoy the advantages, but also face the problems brought by the arrival of digital revolution of education. We focus on the so-called massive open online courses, known by the acronym MOOCs. After all, what is its potential for traditional higher education? Should teachers care for one more "fad"?

The text unfolds into four fronts. First, we construct a brief history of MOOCs, so as to have a structural view of practices and the inherent contradictions of the phenomenon. After, we critically evaluate this scenario, confronting discourses on the innovative character (or not) of MOOCs and what the academic research, in fact, discovered on the phenomenon. The evidence paves way to a discussion on what to expect from the teacher in this scenario. Assuming the role of a "learning designer", the teacher must be able to define contents and abilities to be learnt, sequence the content, plan exercises, gather and organize the necessary information, draw a more adequate evaluation. In the end, it requires basic abilities of media and information literacy. This last aspect is discussed based on the Ecology of Media, in a dialogue between to "old-fashioned" authors: Neil Postman and Marshall McLuhan, who seemed to have predicted the contemporary scenario, when establishing the first discussion on the interface between electronic media and education.

As a recent phenomenon, characterized as such after 2008, when writing this text, an exploratory bibliographical and documental research seemed the most adequate for our critical reflection.

Methodologically, we followed three steps. We read mostly journalistic texts published in periodicals, such as *The Chronicle of Higher Education*, guided by six questions to understand the MOOCS phenomenon: which are their origins? How do they work? What impacts can they have on in-person education? How are they supported? What type of criticisms do they receive? What is the profile of the education professional able to work in this scenario?

Thus, these questions were organized in a map that guided a more systematic reading of academic articles, research reports, TEDs, and other digital multimodal sources, including a structural gaze towards various available online courses in Brazilian, English, and North-American platforms.

With this map in hand and the texts selected to answer each question, we started the writing of the text, narrating the saga of MOOCs.

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MOOCs genesis

Released by great universities, such as Harvard and MIT and, in some cases, using resources of artificial intelligence, MOOCs have as a starting point the offering of the course *Connectivism & Connective Knowledge* (CCK08), taught by Stephen Downes, George Siemens, and Dave Cormier, through the University of Manitoba, Canada, in 2008.

Using free tools available online, CCK08 aimed to explore concepts of "connectivism" and "connective knowledge" in an approach, at the very least, unusual, as explained by the authors in the presentation page of the course (Siemens *et al.*, 2008, electronic document):

> [The course] does not consist of a body of content you are supposed to remember. Rather, the learning in the course results from the activities you undertake, and will be different for each person.
>
> In addition, this course is not conducted in a single place or environment. It is distributed across the web. We will provide some facilities. But we expect your activities to take place all over the internet. We will ask you to visit other people's web pages, and even to create some of your own.

In the experiment perspective, connectivism, according to Downes (2012, p.68-72), "is the thesis that knowledge is distributed across a network of connections, and therefore that learning consists on the ability to construct and traverse those networks", composed by content and tools, people, organization, libraries, web pages, books, periodicals, databases, infographics, videos, etc.

In fact, CCK08 employed four types of activities: 1. Gathering of contents through a daily-sent newsletter entitled "Daily". The recommendation was for students not to read all that was sent. "Even we, the facilitators, cannot do that. Instead, what you should do is PICK AND CHOOSE content that looks interesting to you and is appropriate for you. If it looks too complicated, don't read it. If it looks boring, move on to the next item" (Siemens *et al.*, 2008, electronic document); 2.remix with the chosen content of the newsletter or gathered by learners, using blog editors, *social bookmarkers* such as "del.icio.us", discussion groups, Twitter etc. To trace the remixed content, facilitators asked them to be associated to the hashtag #change11; 3. Re-use, creating new contents or purposes to compose researched contents, in a process of "gathering bricks and mortar": "Draw up your own thoughts and understanding of the material you have added (...). This entire course will be about how to read or watch, understand and

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work with content that other people create, and how to create your own understanding and knowledge. (Siemens *et al.*, 2008, electronic document); 4. Feed Forward, because "what you're doing when you share is to create material that other people can learn from. Your sharing creates more content for this course." (Siemens *et al.*, 2008, electronic model).

CCK08 gathered more than 2,000 people. Its creators concluded that, among other aspects, connectivism (Siemens, 2008) allows a community of people to test and validate what is taught, disseminates knowledge quicker than in the traditional ways of formal educational practice, stimulates learners' autonomous attitudes, and makes learning explicit what, in itself, is an educational act.

The name MOOC was given much later by Dave Cormier, gathering the acronyms of *Massively Multiplayer Online Role-Playing Game* (MMORPG) and *Online Course* (OC) thus creating the *Massive Open Online Courses*. After some time, the creators seemed not to identify themselves with their creature, as shown in the declaration given by Cormier to the journalist Jeffrey Young, reporter of *The Chronicle of Higher Education* (Young, 2013, position 408 of 1684):

> "What they're calling MOOCs now is almost unrecognizable to the stuff we were doing. That early MOOC in Canada, for instance, did not have static lecture videos, which are hallmarks of all of the large-scale courses that this book focuses on. And that early MOOC did not require homework, per se, but instead encouraged participants to discuss the week's theme and content on their own blogs, in a weekly live call-in Webcast, and in occasional meetings in the virtual world Second Life." It was a thriving discussion (…)

The pathways current MOOCs have been taking seem to have been influenced by other two events in the same period. The first was the creation of Khan Academy. It is said that the engineer Salman Khan lived in Boston in 2006, when he started to teach basic algebra to his cousins in New Orleans, through short videos published on YouTube. These videos were not similar to the typical ones in the universities, because they lasted only a few minutes and were based on equation annotations and diagrams Khan did by using a digital table, while narrating what he was doing. These videos helped his cousins and were discovered by other students in trouble around the world.

The story is already known: Khan received generous support from the Bill Gates Foundation, broadened the topics of his video library (reaching more than 1,000 titles) and became a very popular "provider of educational content" (he never called himself an educator) on YouTube. "Khan Academy" became known as a great experiment of digital learning and,

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when Khan defended his ideas on learning in a TED Talk (Khan, 2011), it is said that Sebastian Thrun (professor at the Stanford University and Google scientist) was in the audience and had an insight to assemble artificial intelligence to the virtual learning environment, so that the system would be able to recognize students' learning gaps, and provide personalized exercises that could lead to the "mastery" of mathematics, enacting Khan's (2011) appeal: "teachers need to have measurable results to make teaching more 'humanized' by adding technology". Apparently contradictory, this statement is significant when considering that evaluation systems should enable teachers to have more precise information to improve their in-person education, and not only to assign scores, as frequently happens in the traditional system.

Along this line, Andrew NG, another engineer involved with what has become the "business of MOOCs" and one of the founders of the platform Coursera, relates to journalist Jeffrey Young (2013, position 863 of 16840):

> There's a certain way of thinking that many AI researchers have. It's not the details of the technology, but a certain way of thinking that translates from AI to online learning, which is the idea of automation. I actually enjoy working through problems with students. What I don't enjoy is grading 400 homework activities. And so our thinking was to automate some of the grading so it frees up more faculty time for the interactions. Computers can step in and assess more complex tasks, not just multiple-choice tests. The biggest benefits of mixing AI and education will come later, when systems that can track student behavioral trends online will be in full use.

The investment of Silicon Valley engineers in education broadned the trajectory of MOOCs, so that, today, there is a certain consensus around a double naming. The inheritors of Siemens, Downes, and Cormier are called "cMOOCs", and its main characteristics are to use open free tools, prioritizing collaboration. The automated version (mainly based on video classes, PDF texts, and multiple choice testing) became known as "xMOOCs" and uses programing resources to try to offer personalized content, even with 10,000 students enrolled in a course. We can say that "x" and "c" establish two armies in open dispute, similar to those of the Kauravas and the Pandavas of Bhagavad Gita[5], in a dynamic that Weller (2014) called "the battle for open".

[5] One of the founder of Yoga, Bhagavad Gita is permeated by discussions between Krishna and his disciple Arjuna, when observing the war battles of Kurukshetra. On it, the Kauravas and the Pandavas (or Pandus), two brotherly clans that were raised together, fought in a bloody battle that lasted 16 days. It is said that the Kauravas, using sly actions, stealing the kingdom of the Pandavas, who then lived 12 years in the forest. After following the orders of exile, the Pandavas returned and demanded their stolen kingdom back. As the Kauravas did not agreed, the fratricide battle began.

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On one hand, we find the 'seniors' of open education, based on open educational resources, Creative Commons license, open-coded apps, open research data, rhizomatic learning networks. They fight for what is, historically, their right: the due credit that MOOCs are not only catalyzers of a broader reality known as "open education". On the other, there are the emerging actors of opening, who position themselves as revolutionary pioneers, but, in fact, seem to try to offer free quality content on the internet, without giving up their author rights.

A critic of the predominant optimism in discourses such as those of Daphne Koller in TED Talk on the project Coursera[6], Weller (2014) sees in the discourse of "broken education" the scaffold that supports the educational project of Sillicion Valley. In general lines, the reasoning is: the increasing demand for education cannot be only supplied by the expensive, thus elitist, model of face-to-face education. There must be a way to deliver a quality formation on large scale, with an affordable process (obviously, a predominant view in the United States). According to Weller (2014, p.118-119):

> The reason MOOCs attracted so much attention – and so little critical evaluation – is because they slotted neatly into a broader set of narratives, in a way that other forms of open education haven't. There are two aspects to this broader narrative: the first is the framing of the problem as 'education is broken', and the second is the overriding Silicon Valley narrative that shapes the form of solutions. 'Education is broken' has become such an accepted standpoint that it is often stated as an irrefutable fact.

On this line of thought, lecturer Daphne Koller, in the before mentioned TED Talk, presented three arguments to defend her invention: first, automatized MOOCs can broaden the access to higher education, mainly, students from poor countries or under-development; secondly, the pedagogy behind the systems is innovative, when offering personalized content, dynamically planned by the system, according to the performance of each student when doing their exercises; finally, the use of big data gives teachers more precise information to know what the mistakes and, then, improve their performance when designing their online classes or interacting with students in situations of hybrid education.

[6] Available in < https://www.ted.com/talks/daphne_koller_what_we_re_learning_from_online_education?language=pt-br>. Accessed February 6, 2018. On this speech, the fundaments of the platform created by Koller and Andrew Ng, computer scientists and Stanford professors, are presented.

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Weller (2014, p.123) rebuts the narrative of failed education, paying attention to the rhetorical difference between crisis and opportunity. In other words, the metaphor chosen to characterize a problem influences the identification of acceptable solutions:

> A rhetoric of opportunity might suggest encouraging those already working in the sector to take advantage of opportunities and work with others. A rhetoric of crisis suggests that the incumbents cannot be trusted and that external agents are required to make sweeping changes.

MOOCs emerge, then, as a radical solution because they are managed by the brilliant engineers of Silicon Valley!

The middle way is the best

Beyond the battle between Kuravas and Pandavas (or engineers and traditional educators), more balanced voices appear to relativize things and find a middle way. The veteran on digital education Tony Bates is one of these voices and start rebutting what he calls myths on Koller's discourse (Bates, 2012, electronic document).

First, it is still far the day that MOOCs will in fact supply the demand for higher education in developing countries. Koller used the news of people stepping on each other for a place in the University of Johannesburg, but Bates also reminds that South Africa probably has one of the oldest open universities in the world, Unisa[7]. It is not by providing online education, which cannot be validated by the formal educational system, that engineers will solve the problem of suppressed demand. Things would be different if Stanford University provided certification to South-African students who were successful in Coursera, but that is not the case. In this sense, MOOCs seem more a philanthropy than a revolution.

The pedagogy employed is also not new. The fact of having a robust system that can provide specific exercises to the performance of each student does not exclude the behaviorist character, according to Bates:

[7] http://www.unisa.ac.za/sites/corporate/default

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> (…) based on information transmission, computer marked assignments and peer assessment. Behaviourist pedagogy has its value, especially where there are right and wrong answers, facts or procedures that must be learned, or students lack higher level cognitive processing skills. In other words it works reasonably well for certain levels of training. But it is extremely difficult if not impossible to teach higher order skills of critical thinking, creative thinking, and original thinking using behaviourist pedagogy, the very skills that are needed in a knowledge-based society.

Finally, precisely because it uses a behaviorist approach, with standards that can be reached by all, though not in the same pace, MOOCs platforms do not deliver individualized teaching, but only alternative routes through the material, allowing automatized feedback. For now, individualized treatment is only through dialogic conversation.

Focused on finding a middle ground, Bates (2017, p. 173-218) examines positive and original points of MOOCs. Even automated ones have their value because they are produced by elite universities, concerned with the quality of content, and that have the power to raise media attention and guide online learning. However, it is up to teachers- and exclusively to them- to decide if, when, and how they will use MOOCs technology.

MOOCs + Media and information literacy

At this point, MOOCs seem to meet media and information literacy to form one of the key points to teachers' professional development. Whether to prepare a traditional class, or create an open online course, it is up to the teacher to define contents and abilities to be learnt, to sequence the content, to plan exercises, to gather and organize necessary information, to draw the most adequate evaluation. In this process, the basic ability of media and information literacy[8] to find, evaluate, systematize, and present information are required and, for a while now, are in the agenda of teacher training.

[8] "Media and Informational literacy" refers to a set of abilities needed to critically read and produce media content, controlled by learners' need for freedom of expression, the highest objective of education for media or media-education.

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In a MOOC, we must add the element of mediated communication. As there will be no face-to-face interaction, maybe the correct way is to carefully unfold the course design, with a narrative to be constructed as a sequence of contents and activities. As they are exclusively in the digital format, MOOCs require, in its production, the use of other less common abilities in teachers' daily activities: know how to gather information, to remix and reuse, to feed platforms. In these tasks it is implicit educators' needs to be familiarized with the nature of media texts and its peculiar culture, requiring knowing the so-called "key concepts" of media-education: language, audiences, representation, and institutionalized practices of production (Siqueira, 2017).

In the limits of this text, we can define media-education as a knowledge area that makes media itself its object of study (Buckingham, 2003). In this sense, media-education distances itself from the use of educational technologies. While exploring the latter uses of digital media to teach curriculum components, the former includes critical reading and the creative use of messages and languages in teaching and learning practices. Regardless of the technology used and the theme studied, four key-concepts can guide the design of media-education activities. Table 1 summarizes these concepts.

Table 1 – Synthesis of the key-concepts of media-education

Key concept	Description
Language	This concept teaches that the meaning of messages is not obvious, but the result of a series of technical and symbolic procedures that reconstruct reality in the structure of the message. Pedagogical activities are planned to move from an idea of transparency to an analytical and questioning approach, on how the meaning was built through the articulation of verbal and non-verbal codes. One should separate denotation from connotation leading to a description of elements that compose a message and the order in which these elements are displayed to, based on these evidences, interpret the meanings that emerge from the specific arrangements of language.
Audiences	Investigate the common idea of lacking critical sense and the absence of mental activity from the public when consuming media culture products. Navigate between two extremes: the assumption of an almighty message and vulnerable audience; and the assumption of almighty spectators and innocuous messages. The pedagogical activities should relate textual structures with the answers given by various interpretive communities, leading to the dialectic understanding of audience behavior that can be alienated, critical, or engaged.

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Representation	Guides the flow between the two extremes of common sense, from the concept of messages as mirrors and the fidelity to the idea of fantasy and distortion. To critically study the mechanisms of media representation is less related to the denunciation of supposed fictions translated in reality, than the understanding on how conventions create representations and how such representations vary depending on the intention of the producer and audience expectations.
Institutions	Deals with professional processes of production established during time until they evolve into the "natural way", thus becoming ideological. It is to recover the historicity of these processes, for example, tracing changes, in the criteria of noticeability, in the parameters of what is ethical or unethical in the entertainment industry or the parameters that separate censorship from media regulation.

Source: created by the author based on Lusted, 1991, Buckingham, 2003, QCA, 2003, Unesco, 2011.

There is a certain consensus between media educators that, to make a critical study of messages in educational actions, in a scenario of convergence and technological flow, it is more productive to focus on abilities of transmedia navigation than on the specialization in a specific language or support. In reality, this study can be conducted by investigating the way controversial themes are represented in several channels and means, "dismantling" the message (Siqueira, 2017). In this process, one studies the characteristics of predominant languages, investigates the answers of the audience, looking for clues in the discourse that explain such answers, relates the representation and the codes and conventions in the creation of the discourses for the channel. The analytical experience paves the way to produce activities, when learners (be them students or teachers) are invited to solve a communication problem, creating content.

Traditionally used in texts, such as films, magazine and newspaper covers, publicity advertisements, pedagogical practices of media-education can bring a theoretical-practical support to produce MOOCs, especially when courses are designed by teachers that want to appropriate themselves of this technology to improve their professional practice.

Until now, nobody is sure on how to define and characterize a MOOC. In fact, they apply elements of traditional online courses, when using virtual learning environments and make resources and activities available. However, a more detailed analysis, especially of the so-called cMOOCs, shows other emerging possibilities and place MOOCs in a localizable spectrum between entertainment media and education with technologies, as shown in figure 1:

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Figure 1 –MOOCs place in the spectrum of media texts

Source: created by the author

We take as an example the course "Forensic Psychology: Witness Investigation"[9] offered by the platform FutureLearn of the English 'The Open University'. The objective is to provide an introductory approach on how psychology can help raise evidence of eyewitnesses in police investigations and, thus, avoid failures that can compromise justice.

Divided in eight modules, the course is organized from the re-use of the three-chapter series "Eyewitness", a co-production between BBC and Open University, which assembles members from the public willing to witness two staged violent crimes and help Manchester police in the investigations. Combining fiction, images from hidden cameras, psychological tests and interviews, the series explores the gaps between what witnesses think happened and what has really happened. These events are intersected with explanations given by Open University teachers on the development of sophisticated psychological techniques used by the police to obtain and validate information in inquires. The course modules were also organized based on two fictional crimes: the students have to solve the crimes as they acquire information on forensics psychology.

FutureLearn platform is designed to ease communication and sharing between users, so student groups can gather to try to solve crimes, even bringing external content to the environment.

This brief description of MOOC shows how "Forensic Psychology: Witness Investigation" is a course that blends elements of TV series, such as CSI. It makes the solution

[9] Available in <https://www.futurelearn.com/courses/forensic-psychology/7#section-overview>. Accessed February 19, 2018.

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of an enigma the organizing element of learning and provides scientific and technological knowledge on the topic, all at once.

How can we characterize such an experience? It is online education, but also entertainment media.

In fact, the hybridism between entertainment and education is not news, and other types of media texts are in the same situation. We can think about fiction cinema, that can be in one extreme of entertainment media, but can become an educational resources in the hands of a History or Literature teacher, for example. The contrary is also true: a horticultural book works as a manual in a technical course, but becomes entertainment in the hand of a weekend gardener. Newspapers and magazines move fluidly between the two extremes.

There is, however, a difference that needs to be pointed out. What places a film, a book, a newspaper, on one side or the other in spectrum is how the public uses them. In other words, the language and content of the film, the newspaper, or the book do not change, what changes are readers' appropriations, especially, when they are teachers who carry on the media message to the classroom. In the case of MOOCs, perhaps what we see is the establishment of a hybrid language: the codes and conventions of online courses blended with the codes and conventions of the narratives of entertainment media, however, they are not considered as such because MOOCs are still seen as "courses".

McLuhan and the future of online education

Surprisingly, this hybridism was foreseen in a founding article in the research field currently known as "media ecology". Written in the 1970s by educator Neil Postman addressing the teachers at the "'Teaching English in the 1970s and 1980s Conference", in the United States, his text is an exercise of futurology. The author attempted to discuss subjects such as the end of the teacher and the end of mother language teaching at the border of "nuclear space area". "The soundest reason for having such a subject as English has always been that children need to be competent in using and understanding the dominant communication media of their own culture", states the author (Postman, 1970). If the media changed, subjects, obviously, need to change. In fact, they need to be revolutionized. In this process of radical transformation,

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proposed more than 40 years ago, Postman (1970, p. 161) starts defining what he understands as "media ecology" as the result of a revolution and what it intends:

> (...) to study the interaction between people and their communications technology. More particularly, media ecology looks into the matter of how media of communication affect human perception, understanding, feeling, and value; and how our interaction with media facilitates or impedes our chances of survival. The word ecology implies the study of environments: their structure, content, and impact on people.

In this perspective, a "media environment" can be understood as a complex system of messages that connect, overlap, and dispute among themselves. The dynamic of this process provides certain ways (and not others) to think, feel, and behave. Media ecology, according to Postman (1970, p. 161-162), goes beyond and:

> It structures what we can see and say and, therefore, do. It assigns roles to us and insists on our playing them. It specifies what we are permitted to do and what we are not. Sometimes, as in the case of a court room, or classroom, or business office, the specifications are explicit and formal. In the case of media environments (e.g. books, radio, film, television, etc.), the specifications are more often implicit and informal, half concealed by our assumption that what we are dealing with is not an environment, but merely a machine. Media ecology tries to make these specifications explicit. It tries to find out what roles media force us to play, how media structure what we are seeing, why media make us feel and act as we do.

The quotation above can establish an attunement between connectivism, the previously mentioned theoretical approach of learning, and media ecology, the theoretical contribution of communication. Emerging from different areas, these two contributions seem to endorse the same perspective: use media (or learn) requires knowing how to establish connections between what seems stagnant at first, making explicit these connections, in an epistemological process that would bring more "awareness to the symbolic environment" in which we live and act.

In the era that McLunhan called "electronic egg", i.e., a planet reduced in size due to the efficiency of media and communication technology to disseminate data, an ecological perspective certainly does not exempt school. Classroom itself is a medium and, already in 1970, Postman argues that the amount of information that school makes available to students is too small when compared to the total and informal effort of other communication means. Even the idea of school subject loses its power in the environment, considering that the subjects lose their

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"stability". "And the idea of curriculum subjects is based on the notion of stable content" (Postman, 1970, p. 164 -165):

> Thus, the curriculum of the future is most likely to consist of fields of inquiry from which students learn how to learn about that which is unknown. This means, of course, the end of instruction as the dominant means of structuring the classroom environment. It also means the introduction of many new fields of inquiry, of which media ecology may well be the most important.

If Postman's exercise of futurology did not come into fruition (at least, not completely) in formal education, the same cannot be said regarding the innovative proposals of open online education, MOOCs among them.

An analysis on the main international platforms suggests that the organization of courses from the idea of investigation areas is more recurrent than those of traditional subjects. To illustrate this point Table 1 presents some examples from the platforms Coursera, EdX, and FutureLearn:

Table 2 – Examples of MOOCs

Platform	Areas	Title	Learning proposal	Electronic address
Coursera	Computer Sciences Neuroscience	*Neural Networks and Deep Learning*	Teach how *Deep Learning* works. Learn to use *Deep Learning* in apps. Know how to answer basic questions on artificial intelligence in job interviews.	https://goo.gl/Nmxdix
EdX	Urbanism Political Science	*CitiesX: The Past, Present and Future of Urban Life*	To know perspectives of urbanism in different countries, exploring historical aspects on the emergence of cities, connecting the roles local and national governments play in the development and distortion of cities. Explore cultural contributions of the city in our lives, considering the role of transportation to create an inhabitable city, analyzing public policies, and imagining the future of urban life.	https://goo.gl/fhmX2k

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EdX	Medicine Nutrology	*Nutrition and Health: Human Microbiome*	Learn to relate intestinal health with health in general, learning about the nature of human microbiome, the role of diet, the relation between genes and microbiome and the most recent discoveries on the influence on obesity, diabetes, Irritable bowel syndrome, and even depression. Discuss the importance of academic knowledge on intestinal microbiome on the formulation of health public policies, formation of physicians, and industry regulation.	https://goo.gl/T3QKes
FutureLearn	Communication Sociology	*Gender and Celebrity Culture: Global Media, Everyday Lives*	Recovering aspects of celebrities' lives, as princess Diana, David Bowie, Emma Watson, among others, exploring production issues, identity, visibility, activism, and social and cultural changes, fomented by media culture. How is a celebrity made: How do they connect with the construction of identities? "Is the "celebrity feminism" good for gender equality?	https://goo.gl/e6z3rz
FutureLearn	Administration Pedagogy	*Professional Development for Early Career Teachers*	Develop strategies to manage the workload and demands of professional development. Explore approaches of practices on teaching and learning, and use strategies of 'Assessment for learning' (AFL), to effectively map students' learning progress and needs.	https://goo.gl/mAf9mU
Coursera	Western Philosophy Psychology	*Buddhism and Modern Psychology*	Present the most recent discoveries on the compatibilities and incompatibilities between Buddhism and modern psychology, with the support of neuroscience. Explore questions raised by scientists. Physiologically, how meditation "works"? Would	https://goo.gl/x1aqSS

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			this understanding validate meditation: Or could the physical explanation hinder the spiritual meaning of the practice? How to scientifically interpret Buddhist statements on the mind, for example, that there is no I, that a great part of perceived reality is an illusion?	
Coursera	Visual arts and history	*In the Studio: Postwar Abstract Painting*	Offer a deeper perspective on the materials, techniques, and the thought of seven post-war artists. Through studio demonstrations and gallery guides, to understand how the studio practice works and see up close how abstract ideas develop. Explore the broader cultural, intellectual, and historical context after WWII, when these artists were active.	https://goo.gl/MaFDYw

Source: created by the author

A quick examination of the topics and activities of each course shows some important common characteristics. Generally, the learning path is organized from interdisciplinary issues (for example the course "Buddhism and Modern Psychology") and the subsequent exploration of specific topics that comprise these questions. The topics are normally developed from "characters", as the seven painters in "In the Studio: Postwar Abstract Painting" and the five celebrities in "Gender and Celebrity Culture: Global Media, Everyday Lives". All courses connected knowledge from different areas and use several supports, many of them from the re-use of contents, such as films, animation, literary excerpts, graphic pieces, etc. The remix practice, which blends classic and contemporary texts (for example, Buddhists scriptures and film excerpts), and the simulation of situations to be experienced by learners during the course are two typical practices of digital media culture incorporated by MOOCs. In almost all cases, there are collaboration spaces, in which learners are stimulated to gather in web groups to solve challenges proposed by the study program, evaluate classmates' works, or develop an online discussion on a specific topic or an unfolding that might emerge along the path. These characteristics blur the boundaries between education and entertainment and seem to turn the experience of attending a MOOC into a media experience.

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Content-design teachers

Thus, a new role emerges for the teacher in this environment: he/she becomes a "designer of media experiences of learning". Something intuitively foreseen by Postman (1970, p. 165):

> But most of all, he will differ from today's teachers in his understanding of the role of a "teacher." He will not be much of a talker; rather a listener. Not much of an answerer; rather a questioner. Not much of a tester; rather a rewarder. Not much of a restricter; rather an opener. His work will consist largely of designing an environment in which high school students can learn how to ask questions, to distinguish between relevant and irrelevant questions, to invent methods of finding answers to their questions, to develop the capacity to conduct inquiries with rigor, and to apply the results of their work to some vital aspect of their lives.

At this point, we must ask: "What abilities should a designer-teacher have?" To answer this question, though briefly in the limits of this text, we should first recover a primary definition of what is design. According to ULRICH (2017, electronic document), it is a practice that consists in "conceiving and shaping artifacts that solve problems. The design fits into an overall problem-solving process where a gap or lack is experienced".

In Ulrich's (2017, electronic document) perspective, four steps seem key in the creation of objects, visual communication, public services, software, or MOOCs to carry out a project:

> **Perceiving a gap:** the design starts with the definition of something that is still lacking in users' experience. With no gaps, there are is no reason for a project. This gap can be filled by the own users of the object or service, or by the designer him/herself.
>
> **Definition of a problem:** it is an explanation that the designer creates to understand how users experience the gap. This diagnosis can be considered as an identification of users' needs that are not fulfilled or the acknowledgement of criteria for a process of systematic research.
>
> **Exploring alternatives:** after establishing the problem, designers map possible alternatives, in a process of systematic research.
>
> **Selecting a plan:** in the exploration phase, more than one solution is generally found, therefore, the design requires some type of evaluation and selection among the alternatives. There are cases in which many alternatives solve the problem, thus, the need to articulate plans, interactively refine them until a satisfactory solution is reached.

Considering all that was said about MOOcs up to now, we can say that teachers literate in media and information would be more apt to identify the learning gaps in their subjects,

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turning these gaps into research problems, identify open digital resources, reuse, remix, and produce new content, as teaching alternatives, and create complementary paths (or plans), taking advantage of MOOCs technology.

In this pathway, open educational resources, massive open online courses, media and information literacy, and design techniques seem relevant to answer the questions posed in the beginning of this text: after all, what potential do MOOCs have for traditional higher education? Should teachers care about this "fad"?

The reasoning developed until now intends to argue that yes, teachers should care with the phenomenon of MOOcs, because this technology can, potentially, offer practical solutions to some known and persistent problems in traditional higher education, among them, the rigidity of the curriculum, that do not always encompass recent and important discoveries in the different areas of science, the focus on the dissemination of contents, that makes no more sense in the context of information abundance, the artificial division of knowledge into subjects, the emphasis on verbal text, when the symbolic experience of students outside the classroom is transmedia, to list only some issues.

However, considering the narrative of "failed education" and the struggle between the Kuravas and the Pandavas, which are effectively part of the MOOCs universe, it is clear that the appropriation of these technologies require systematic investigation and critical evaluation. This evaluation can be done from the analysis of the advantages and disadvantages of MOOCs in the light of accumulated knowledge on online education, as proposed by Bates (2012).

Analyzing the "anatomy" of xMOOCs and cMOOCs, Bates (2012, p. 183-190) reached some stable characteristics, synthetized on table 2.

Table 3 – Main characteristics of MOOCs

xMOOCs	cMOOCs
Have automated platforms and especially designed to support a massive number of participants. Support streaming videos and other digital resources, in general with copyright and re-use limitations.	Rarely use specific automated platforms. Organized from a combination of tools, among which open repositories, blogs, tweets, webcasts, connected by hashtags created to each course. Participants decide what contents to add and discuss. Teacher organizes the collaborations and offers a structural view on what to be produced by students.

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Audiovisual material in general is composed by lectures, even if the teacher is not in a conventional classroom. Use automated evaluation with more frequency, in general with multiple-choice tests, with instant feedback. Use peer evaluation, providing tasks for participants to be evaluated by other participants. In some cases, the teacher makes general comments on students' performance, but without focusing on specific cases. Use external open-education resources but, in general, as a complement. Grant badges[10] or certificates (generally paid) when concluding the course.	In general, there is no systematized evaluation. Participants are invited to make a self-evaluation, using as a reference the proposal of the course.

Source: created by the author base on Bates, 2012

Summing up, xMOOCs are courses based on the dissemination of information organized into narrative sequences, that automatize all interactions between the participant and the course, and offer big data reports so that instructors can produce generic analysis on students' performance. cMOOCs use teaching based on connections and discussions carried out by participants, through social media with the support of the organizing teacher.

From the perspective of media ecology, a pathway of additional analysis can be included in this point. In fact, xMOOCs and cMOOCs are still works in progress, and the comparison between the two columns of table 2 suggest a movement described by McLuhan (1996), one of the main thinkers in the theoretical contributions of communication brought to this text.

In this perspective, what we have, for now, are MOOCs that, on one hand, mimic the traditional virtual environments of learning and, on the other, mimic social networks. Inserted in a digital media ecosystem, they integrate elements of other media, such as games (by attributing badges and the simulation of cases, for example) and cinema (when teaching through characters). Thus the importance of an agenda of critical investigations and the systematic experimentation of this media-educational phenomenon that, as any other, have advantages and

[10] These are verifiable portable digital badges, with metadata that inform the abilities and accomplishments associated to them. In general, they associated an image, shaped as a stamp, to a course or exercise and an issuer, describing the learners' accomplishments mean. All these information, can be "packed" into an archive that can be latter added to online resumes, personal pages in social networks, etc.

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disadvantages. Some of them were mapped by Bates (2012); Ferguson, Coughlan and Herodotou (2016); Levy and Schrire (2015).

Among the most easily identifiable advantages are:

- Availability of free quality content
- Availability, as it is possible to attend a MOOC with a smartphone and an internet connection
- Platform versatility, because of the diversity of available tools and the open and flexible nature of the course, allows shaping the learning pathway depending on teachers' objective or students' learning needs
- Fill learning gaps
- Efficiency on the creation of learning communities, gathering students, novices, teachers, experienced professionals, amateurs on the topic, etc.
- Communication of basic concepts with simplicity and ease.

The most common disadvantages identified by the research included:

- Difficulty to retain students until the end; drop-out rates are close to 90%[11]
- High cost, in the case of xMOOCs, which require platforms with complex programing; depending on the university structure, there is also the need to foresee the costs of audiovisual production.
- As they do not have the local support of a tutor and, often, require a significant presence of the teacher, the MOOCs require experienced and autonomous students. That is why most MOOCs users already have an undergraduate diploma.
- Are limited to developing complex concepts, as this type of activity requires practice, discussion, and continuous support, which only exist in in-person education.

[11] Several studies have mapped the use patterns of MOOCs. With some variations, these studies identified four types of users. There are those who register, as if the enrollment was so type of bookmark. Those who navigate the content, but do not effectively participate and are not interested to get a certificate. Those who access the content randomly, that is, do not follow the narrative pathway of the course, as if reading a newspaper. Finally, there are the active participants, who access all contents in the order planned by the teacher, do the tasks in the right time, collaborate with their peers, and are interested to receive a final certificate. Therefore, drop-out rates cannot be explained by the same reasons as those in conventional courses.

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- There is no adequate technology to integrate current knowledge on assessment to the platforms, which evaluate either through automated tests of multiple choice, or through the evaluation of peers, who are not always experienced on the topic.

Bates (2012) ponders that, in the end, MOOCs mobilize few of the known abilities needed to learn in the digital era. Starting from the premise that knowledge is composed by two intrinsically connected components, content and abilities, the author argues that, as rule of thumb, university professors are experts in the content and have a structural and deep understanding of the area they teach. They master the facts and ideas, the principles and evidence, describe processes and procedures.

The development of abilities is another issue. It is true that teachers develop abilities – even if it is the ability to reproduce content – but the current scenario demands a deep analysis on the relevance of the abilities taught in the subjects.

To illustrate, before exploring the issue of abilities, we must recover a piece of news. It is known that Google has an algorithm to hire workers, which prioritize the selection of computer science students with the highest grades, from elite universities, as if only these scientists were able to understand technology.

In 2013, as reported by the American professor Cathy N. Davidson (Strauss, 2017), Google decided to test its hiring hypothesis and deeply studied all the data on hiring, dismissal, and promotion accumulated since the creation of the company, in 1998. The study has shown that, among the eight more important qualities of the best Google employees, programming knowledge was the 8th one. Before that, seven abilities were listed: be a good for the team, know how to listen and communicate, be able to produce insights on others (including truly understand the different values and points of view), be emphatic and support workmates, make constructive criticism, know how to solve problems, and know how to make connections among complex ideas.

Several abilities coincide with those pointed out by Bates (2019, p. 20-23) as essential, though difficult to be developed through MOOCs education: communication abilities, including reading, writing, speaking, and digital presence, knowing how to incorporate feedback and share information adequately; ability to assume responsibility on what is to be known, being resourceful to find this knowledge; know how to win the trust of others through ethical and responsible attitudes; work in teams and flexibly, knowing to compromise for the sake of

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collaboration; cultivate an attitude of constructive criticism, needed to solve problems, for strategic development, for creativity; know how to use technology incorporated to relevant knowledge to learners' theme area; know how to use technology to manage one's own knowledge, assessing what is outdated, identifying gaps, testing and validating new information.

The brief list of abilities presented in the last two paragraphs suggest that the traditional way universities teach and learn, though requiring an urgent update, is not obsolete. If the dissemination of content seems to flow better through digital media (and reach a mass of people in online open courses, in a scope impossible to any in-person course), the development of appropriate abilities to different areas of knowledge still requires the creation of restrict and specialized context. Problem-solving is radically different for a teacher, an engineer, a social assistant, or a physician and requires specific approaches that cannot be generalized in a massive course. In general, abilities require supervised practice by someone who already has that ability. Feedback, in these cases, need to be individualized, trial and error needs to be resignified to make sense.

Final remarks

The argumentative flow of this text was triggered by two questions: after all, what potential do MOOCs have for a traditional higher education? Should teachers care about this "one more fad"? The discourse was built aiming to affirmatively answer this question: teachers must be concerned, because we are faced by something potentially disruptive, not in terms of democratization on the access to higher education, but mainly in the relation to the diversification of ways to provide education, though MOOCs technology is still a resource under construction, susceptible to political and economic disputes, with advantages and disadvantages.

Thus, it is the right of the designer-teacher to decide when and how to incorporate MOOCs to his/her practice. Equipped with the necessary theoretical, practical, and pedagogical knowledge, it is up for the teacher to consider the consequences of introducing MOOCs to his/her practice, what roles they will have within the subject, in what measure the design is

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consistent in terms of educational conception and the reason to opt for a MOOC instead of an in-person class or a conventional online resource. There is also the need to find a solution to the assessment gap, which is not the same for students enrolled in the university offering the course and the external participants.

Nevertheless, practice and experimentation are key to the current phase of MOOCs development. A mixture of education and media experience, the massive open online course fit what McLuhan (1996, p 62.) called hybrid media that, when emerge, bring "moments of truth and revelation". "The moment two media meet is a meeting of freedom and liberation of a trance and common stun imposed by them in our senses".

At least, the introduction of MOOCs in the traditional higher education in Brazil will rouse from torpor those teachers who refuse to review their practices in the light of the here and now. We know they exist. And we know they need to develop.

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