Opportunities of the New Educational Space for Higher Education: Third Digital Environment*

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ABSTRACT

This theoretical-reflective study proposes an analysis of the changes generated in higher education, in the role of the teacher and the classroom, the inclusion of Information and Communication Technologies. A set of technologies enables the construction of a new social and cultural space, called the third environment, whose structure is different from of the natural (first environment) and urban (second environment) environments where social life has traditionally developed, and the education particularly. The methodology corresponds to the qualitative narrative systematic review, for which the documentary analysis technique was used. In this sense, the evolution of the use of technologies in education and the changes they have produced are presented, not only in the appearance of new teaching instruments, if not also affecting the structure of the social and educational space, which itself constitutes the third environment. This situation leads us to rethink the role of the teacher, the relevance of the area where is given the instruction, which in the third environment is the network and not the classroom, the training process that is not face-to-face but representational and where communication is asynchronous. Thus, the necessary changes are described in the classroom and also in the teacher to adapt and emerge in this new social and cultural space. Concludes on the urgent need to rethink the institutional and teaching praxis in light of the implications in the integration of the face-to-face and digital environments.

KEYWORDS

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Oportunidades do Novo Espaço Educativo para a Educação Superior: Terceiro Entorno Digital

RESUMO

Este estudo teórico-reflexivo propõe uma análise das mudanças geradas no ensino superior, no papel do professor e da sala de aula, na inclusão das Tecnologias da Informação e Comunicação. Um conjunto de tecnologias permite a construção de um novo espaço social e cultural, denominado terceiro entorno, cuja estrutura é diferente da dos ambientes natural (primeiro entorno) e urbano (segundo entorno) onde a vida social se desenvolveu tradicionalmente, e particularmente educação. A metodologia corresponde à revisão sistemática narrativa qualitativa, para a qual foi utilizada a técnica de análise documental. Nesse sentido, é apresentada a evolução do uso das tecnologias na educação e as mudanças que elas produziram, não apenas no surgimento de novos instrumentos de ensino, mas também afetando a estrutura do espaço social e educacional, que por si só constitui o terceiro ambiente. Essa situação nos leva a repensar o papel do professor, a relevância da área em que a instrução é dada, que no terceiro ambiente é a rede e não a sala de aula, o processo de formação que não é presencial, mas representacional e onde a comunicação é assíncrona. Assim, as mudanças necessárias são descritas tanto na sala de aula quanto no professor para se adaptar e emergir nesse novo espaço social e cultural. Conclui a necessidade urgente de repensar a práxis institucional e de ensino à luz das implicações na integração dos ambientes presencial e digital.

PALAVRAS-CHAVE

Espaço virtual. Ambiente virtual de aprendizagem. Telemática. *Internet*. Professores de educação superior. Educação superior.

Oportunidades del Nuevo Espacio Educativo para la Educación Superior: Tercer Entorno Digital

RESUMEN

Este estudio teórico-reflexivo plantea un análisis de los cambios que genera en la educación superior, en el rol del docente y del aula la inclusión de las Tecnologías de Información y Comunicación. Un conjunto de tecnologías posibilita la construcción de un nuevo espacio social y cultural, llamado el tercer entorno, cuya estructura es distinta a la de los entornos naturales (primer entorno) y urbanos (segundo entorno) en donde tradicionalmente se ha desarrollado la vida social, y particularmente la educación. La metodología corresponde a la revisión sistemática narrativa cualitativa, para lo cual se utilizó la técnica del análisis documental. En este sentido, se presenta la evolución del uso de tecnologías en la educación superior y los cambios que han producido, no sólo en la aparición de nuevos instrumentos docentes, sino afectando también la estructura del espacio social y educativo, que conforma en sí el tercer entorno. Esta situación nos lleva a repensar el rol del docente, la pertinencia del recinto donde se da la instrucción, que en el tercer entorno es la red y no el aula, el proceso formativo que no es presencial sino representacional y donde la comunicación es asíncrona. Así, se describen los cambios necesarios tanto en el aula como en el profesor para adaptarse y surgir en este nuevo espacio social y cultural. Concluye sobre la urgente necesidad de replantear la praxis institucional y docente a la luz de las implicaciones en la integración del los entornos presenciales y digitales.

PALABRAS CLAVE

Aprendizaje virtual. Entorno social. Telemática. *Internet*. Profesor de enseñanza superior. Educación superior.

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Introduction

It is possible to observe that a cultural inflection has been driven by Information and Communication Technologies (ICTs), which allows the emergence of a new virtual space where the people act, interact and learn, which was added and integrated into the traditional face-to-face space. At the beginning of the 21st century, Echeverría (2002, p. 200) emphasizes the scope of the emergence of new technologies: "it is necessary to keep in mind that ICTs are producing a true techno-scientific revolution, the consequences of which are manifested in the most varied spheres of social life."

It is necessary to ask a critical question: can we educate ourselves in this virtual space? As Savater reflects (2012, p. 19), "education is always something that humans have to do with each other; nothing educates more than people." And he follows: "Many things inform, but only people educate," so, at school, it is the teacher who helps, guides, has the capacity for empathy and the relationship provokes the desire to learn. We will use the school in this study as a concept in a broad sense, covering all levels of formal education: primary, secondary, and higher. Technology, of course, can assist the teacher in this task. Technology is a tool that human beings use for their development, and, therefore, learning supported by various technologies without face-to-face mediation with another person remains a utopia. However, even face-to-face conception becomes diffused by the vast possibilities of using videoconferencing systems.

In this study, we will see how, in different historical moments, certain technologies have tried to be a panacea to solve education problems. They were not successful, but does the Internet present us with possibilities and opportunities until now had not been created for higher education? Does its current new problems for schools and universities? What does this hypothesis of the third environment offer to university teaching? To answer these questions, we count on Echeverría (2004) contribution, philosopher, and mathematician who anticipated various properties of the new third environment (E3) in which the university is immersed. This new space, made possible by telematics, a set of ICTs, finds several names in the literature, such as digital, electronic, virtual environment, ubiquitous learning environment, immersive environment, digital learning scenario, virtual learning environment, or virtual space.

The hypothesis of the third environment visibility to a reality of a new territory in which we live and live, in which virtues and defects typical of human coexistence are reproduced, and several new ones, specific to living in / with and with telematics technologies. The concept of the third environment is a contribution to understanding the opportunities of the new normality that the latest technologies allow for its existence. Historically, the university creates and develops technologies and scientific knowledge that impact society from the inside out. In the context of a third digital environment, the impact on the university is occurring from the community. The transformation in the ways of learning and teaching is happening from the outside to the inside.

Methodology

To carry out the study, we did a critical reading of the primary texts, in which the technique of document analysis was used, which provides retrospective information on a phenomenon, situation, or program, based on a planned and systematic activity (LATORRE, 2003), that is, a qualitative narrative systematic review methodology. As we will see below, an extract was made of the information derived from institutional studies and conceptual structures that make us conclude what is stated in the following sections. This analysis made it possible to identify, in international and national documents, what are the conditions, demands, and opportunities of the university in this emerging context, the E3.

Development

Do Technologies Solve the Problems of Education in Universities?

The incorporation of technologies associated with communication in the teaching and learning processes, since the beginning of the last century, offered great promises and, at the same time, great disappointments in the educational field. In 1922, Pennsylvania State University broadcasted the first courses on the radio. That same year, Thomas Edison predicted that films, the first modern technology for learning, would replace study texts and perhaps teachers in the classroom. During World War II, there was a need for massive distribution of films to train millions of service people worldwide in various subjects, from personal hygiene to weapon maintenance. This success has resulted in more creative instructional films and topics appropriate for children in schools and universities. A growing trade in educational films has provided material on every imaginable subject (Rosenberg, 2001).

However, it was television that managed to revitalize educators. As early as 1934, Iowa State University started televised courses on oral hygiene and identifying star constellations. Television could bring any learning topic to the classroom. The videotape could capture the best instructions for continuous use so that television could guarantee access for learning to even the most remote geographical areas. Once again, the possibility of replacing the teacher could be a possibility.

Despite some extraordinary successes, television for educational purposes has not provided a learning utopia. Many educational institutions have invested millions in equipment but realized that they had no money for programs or staff to create them. Most of the programs created lacked instructional design, and teachers did not know how to integrate them with classroom learning. But the main reason why television did not become a teacher was that it lacked the highest quality of teaching: the ability to interact with the student, provide feedback and change the presentation to meet the student's needs. Television was a unidirectional provider of information, but it was not education in the absence of meaningful negotiation.

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This need for interaction renewed the effort in the Computer-Based Training (CBT) area. Although in 1946, with the introduction of the first commercial computers, the first computer-based educational programs were born. With the aim of training personnel to insert data into them, it was only in the 1970s and 1980s that a tremendous amount of effort in this field was dedicated to them. The first results were marginal. The advent of the personal computer has become a turning point. By deploying more personal computers in homes and offices, CBT developers began to imagine a joint hardware base for running programs. But this hopeful signal was short-lived, as differences in hardware, software, programming languages , and other technical barriers made universal availability more of a desire than reality. The programs had to be developed in different formats, which resulted in an expensive proposal. And as soon as a program reached the market, changes in the technological platform made it obsolete (ROSENBERG, 2001).

In 1969, the Internet emerged, and in 1976, the University of Phoenix was opened, the first university in the United States to offer online courses. It is interesting to highlight the role that the university played in technological development since all the significant technological advances that led to the creation of the Internet resulted from government institutions, large universities, and research centers. The Internet did not originate in the business world (CASTELLS, 2001).

Learning technologies were driven by repeated failure cycles, as pointed out by Rosenberg (2001). A technology is developed, and we try to use it to solve educational problems; this results in expectations that cannot be met. Many of the apprenticeship programs are deficient in design and effectiveness. It is established that the use of technology has been inappropriate and unproductive. People return to what they already know: proven traditional teaching techniques until the next big technology arrives and the cycle is repeated. Has the Internet changed that? Will it break the cycle?

The incorporation of technology in the daily uses of man is a trend that has been growing in recent decades. Virtually all innovations in information and communication technology have been adapted for educational use, from teaching radio courses to the present day, when the proliferation of mobile devices means that we can learn in the palm of our hands (STUMPENHORST, 2018).

This growth increased dramatically in the 1990s and entered the new millennium. E-learning was generated in that period; to such an extent, it was believed that e-learning would replace traditional learning. After the peak, the trend decreased, combining technological elements with traditional ones, emerging as a trend the mixed, combined, and blended learning modalities. Today, given the recent proliferation of Web tools, technology-mediated education receives new contributions and renews its methods. In 2002, Echeverría proposed developing and bringing the educational institution to the Internet, not the Internet, to the educational institution, a proposal that it supports and expands in 2012 (ECHEVERRÍA, 2002, 2012).

On the other hand, the multiplication of open source Learning Management System (LMS), in a way, democratizes the tools, making them available to a more significant number of users. It is worth clarifying that, despite the peak of different technologies, none ended up replacing others. Still, currently, they are integrated among them and are applied according to the educational needs of each project. Users integrate face-to-face meetings with mobile tools, online forums, etc. Each technological device has to be carefully evaluated before being incorporated into educational institutions. Watters (2019) documents the failure of a hundred dominant trends in educational technology in recent years, several of them thought or created as "the solution" for education in schools and universities.

In this context of significant technological advances, if the automotive industry had undergone a development similar to that of digital technology, for example, the smartphone, you could have a Rolls-Royce for less than a thousand dollars. You would also have the strength of a transatlantic to travel a million kilometers (about 25 times around the world) with just one liter of gasoline. A dream that has already come true in the field of information technology.

In particular, we look at smartphone use because it has become the technology with the most remarkable presence inside and outside schools and universities. A set of studies from several countries that analyze Zubizarreta and Caldeiro (2019) reflects that the age of onset and access to these devices is increasingly younger. According to these same authors, at the end of 2015, 97% of the world population used smartphones, and the number of active devices exceeded the number of people on Earth. In the particular case of Brazil, as of 2018, 83% of individuals, aged ten or over, had a smartphone (CGI.BR, 2019a). In turn, Internet access was concentrated via smartphones. From 2015 to 2018, urban school students who access the Internet using their smartphones increased from 91% to 97%. Likewise, there is accelerated growth exclusive use of smartphones to access the Internet by children and adolescents between 9 and 17 years of age, from 17% in 2004 to 53% in 2018 (CGI.BR, 2019b). At universities, above 98% and more of students have smartphones with an Internet connection, according to the longitudinal study by Galanek, Gierdowski, and Brooks (2018) applied in several countries.

Students need training in using the technological tools used in the subjects and creating their Learning Environment (PLE), strategically integrating the diversity of technologies and SR available and the typical institutional platforms or Virtual Learning Environment (VLE).

According to the Environment, The Classroom as a Social Space

To characterize the first, second, and third environments, we rely on the contributions of Echeverría (2004). The first environment (E1) corresponds to the natural environment that involves human beings and their bodies with the senses that can explain this environment (smell, vision, hearing). The second environment (E2) is cultural and social, called the built

urban environment. Finally, the environment is what is around our body, our vision, or, in general, the various implementations created to expand our immediate space. In this sense, ICTs allow constructing a third environment (E3) structurally different from E1 and E2.

E3 is a new social space under construction that depends on a series of technological innovations. As recent technological advances emerge, the properties of E3 will change, as it is an artificial space. This E3 was only possible after numerous technical and scientific advances; it resulted from technology (ECHEVERRÍA, 2004). The description of the three environments that Echeverría identifies groups it into twenty properties, variables, or cultural dimensions of the three environments, with a gradation in each of them (Figure 1).

Figure 1. Properties of the first, second and third environment

First and second environment	Third enviroment
Proximal	**Distal**
Enclosure	**Reticularity**
Presential	**Representation**
Synchronous	**Multicronic**
Analog record	**Traceable digital record**
Material	Informative
Natural	Artificial
Extension	Compression
Physical mobility	Electronic fluency
Slow circulation	Fast circulation
Clearance on Earth	Clearance in the air
Stability	Instability
Locality	Globality
Sensory Penta	Sensory Bi
Internal natural memory	External natural memory
Analog	Digital
Semiotic diversification	Semiotic integration
Homogeneity	Heterogeneity
Nationality	Transnationality
Self sufficiency	Interdependence
Production	Consumption
← ──────────────────────────→	
PRESENTIALITY *blended learning*	
VIRTUALITY	
Classroom	**Virtual learning space**
− Content − Skills − Attitudes, values	− New content − New activities − New forms of interaction and collaboration

Source: authors based on Echeverría, 2004, 2015; Sáez, 2009

The integration of E2 and E3 forms the blended learning (BL) modality, which for Dziuban et al. (2018) is already configured as the new normal. An example of this integration of BL in higher education as a new normal is the University of Northampton, which adopted BL in its pedagogical model, Active Blended Learning (ABL). Its motto is "ABL is our new normal. ABL is not something we do in addition to our regular teaching tasks: it is our standard approach to learn and teach" (UON, 2020). It should be noted that the term online does not appear in the definition of ABL.

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Although the new technologies have created a new environment, formal face-to-face education has only been visited and used marginally, without the massiveness and success that technological tools can be attributed to. What is the reason for this success in the E2 classroom? The classroom functions as a system of communication and interaction. The classroom is physically isolated from external stimuli to allow students to focus on the learning tasks designed by the teacher. The traditional or digital whiteboard or the projection curtain is an essential focus of attention and a means of presenting information through words, numbers, images, videos, diagrams of various types.

When a teacher develops a problem or an exercise on the board, he guides students' learning. The questions they ask are to reflect others, and the teacher's responses serve all students, which he builds in his negotiation and subsequent appropriation of meanings. The relationships between students and the teacher, between students and between them and the object of knowledge make up a rich plot that builds knowledge, which can hardly be reproduced by a study text or other means without the teacher's presence. The classroom generates an economy of scale that comes from the group's interaction with the support of various technologies (TIFFIN; RAJASINGHAM, 1997).

The teacher's figure continues to have its intrinsic value that technologies have not compromised. It produces a feeling of belonging, generates a system of communication and interaction and a work rhythm, offers support scaffolding. However, technologies made recent inflection that does not threaten the figure and role of the teacher or the face-to-face instance but is being revitalized with the integration of online technologies in a mixed and combined modality. From the BL, a new universe of interactivity appears for the didactic relationship. New forms of teaching and learning must be designed, studied, and understood in their interactions with new media and learning contexts (BARTOLOMÉ-PINA; GARCÍA-RUIZ; AGUADED, 2018). These unique cultural contexts and environments that facilitate and sustain learning, promoting interaction, collaboration, and building a sense of belonging among members are crucial elements of blended learning. It must take place in a dynamic, flexible and adaptable (LÉVY, 2009).

The traditional classroom system, E2, offers students the possibility to discuss and share their experiences with others in a group. In the student-reality relationship, people shape the context of the application. However, this relationship, on which a truly effective learning environment is based, is far from the student-reality association. Most of the first e-learning solutions are identified, which suffered from the interaction between the participants and the face-to-face support. Since there is a lack of contact with a close tutor who guides the student, supervises his progress, motivates learning, who does not limit himself to solving his doubts and technical incidents. But teaches him to learn and which favors commitment, is far from being the figure of the "virtual tutor," whose work is, in many cases, reduced to the resolution of incidents. Until now, we have been trained essentially in face-to-face modalities, but today, "human beings are analogous beings trapped in the digital world" (SÁEZ, 2009, p. 183). At E2, we learned slowly, step by step, individually, one thing at a time and seriously.

Third Digital Environment, New Learning Space

This E3 is composed of new information and communication technologies (ICT), not just the Internet, but a technological system that includes: telematic networks, mobile telephony, digital image and sound (television, radio, photography, videos, digitalized cinema, etc.), video games, electronic money, computer simulations, virtual reality, telecommunications satellites and digital memory (ECHEVERRÍA, 2009). Furthermore, this new reality introduces a range of innovative phenomena, which revolve around managing information and the relationship between human beings (RODRÍGUEZ, 2018). Therefore, technologies are not simple tools that help to do these things, but they constitute authentic mediations of these actions. Consequently, they would not be feasible without them (ECHEVERRÍA, 2015).

Week by week, we are getting used to receiving news of technological advances associated with ICTs. However, in education, we are just studying how they are being used and their impact on these experiences, still marginal in numbers to face-to-face training. Use or support technologies. In addition, research on teaching and learning methods at the university is relatively recent compared to the same type of studies at other educational levels (GROS, 2011). However, Castells has already warned that "the Internet is structuring the main economic, social, political and cultural activities worldwide. Being outside these networks is the most serious form of exclusion that can be suffered in our economy and our culture" (CASTELLS, 2001, p. 17).

The interrelation with the outside world and the distance that we can cover with our sensory organs are limited concerning what we can achieve. From smoke signals, the use of batteries to transmit signals over long distances, still visible and audible, to telegraph and telephone, was expanded. With the Internet, the vision and experience of space and time in E1 and E2 have been modified. Democratization and access to information over the Internet continue to grow. This is how treasures and cultural documents exclusive to libraries and archives worldwide, such as manuscripts, maps, rare books, films, sound recordings, publications, and photographs, can be consulted with unlimited and unrestricted access. For example, at the World Digital Library created by UNESCO, in the Gutenberg Project library, in the Vatican Digital Library (TORRES, 2020).

E3 expands learning times and spaces, making content ubiquitous. We are faced with the ubiquity of resources and the multi-screen experience making technology invisible. The old E2 expertise at the university, in which everyone ran after the only copy of the book available in the campus library, is overcome by libraries, repositories, and digital databases. Each student has a copy of the study materials. Of course, these aspects are accompanied by the challenge of learning to read on the screens.

E3 is an emerging property of the ICT technology system and the electronic space. Echeverría (2012) mentions that there are many examples of the emergence of new social areas throughout the history of technology. He offers as an example what he calls the

Republic of Sciences, Arts, and Letters, which would not have appeared without the press. The Encyclopedia of the French Enlightenment is an excellent example of this knowledge space since the current Wikipedia incorporates the Web.

The power of ICT lies not in the "surprising power of its circuits, but in the virtual space of the new human possibilities, it creates. Technological innovation consists of inventing and building the realities that technology makes possible" (SÁEZ, 2009, p. 53). The proliferation of information and technology in education induces specific radical changes from local and frontal teaching, centered on the teacher, towards another online and centered on the student. E3 is changing the classroom, which will no longer be the standard information delivery system.

The synergies between e-learning and face-to-face classes will be increasingly refined, and new uses will be found in the classroom. Each one will contribute with its essential value; there will be less teaching and more facilitation. There will be a tendency to associate classroom learning with applications and work teams, and e-learning with content and tools, using existing materials. Increasingly, "most of the objects with which we operate in electronic space exist only in digital form and must be preserved in that medium" (ECHEVERRÍA, 2009, p. 560).

The classroom remains the cornerstone of society in appropriating culture and preparing people for proper performance. In virtual spaces, we use the metaphor of the virtual classroom, another "classroom" that can be integrated into the school; therefore, with technology, continue the classroom and virtual environments. Some universities are taking on the challenge of renovating physical learning spaces: they are redesigning the classroom for active learning, constructing new buildings and campuses, explicitly developed to facilitate the meeting of E2 and E3 (OLSEN; GUFFEY, 2016; UON, 2020), increasingly renovating classrooms to be flexible spaces that support student-centered teaching. Adedokun et al. (2017) note that students report that the flexible space has improved their learning experience, supporting participation in the classroom. We are verifying the value of presence as an ideal meeting point, as a plenary session, and, in turn, virtual spaces, a place and time for interaction, collaboration, and preparation for face-to-face meetings with the teacher and other students.

At E3, we not only transform information and communications, above all, we realize that there have been transformations in human, individual, collective and institutional relationships (ECHEVERRÍA, 2015). For example, at the University of Northampton, on their website, they explain to students the intention of "how we teach" through the following message:

> "As we teach:
> • At the University of Northampton, our teaching focuses on you and how you will use your new knowledge in the world.
> • We refer to our approach to teaching as Active Blended Learning (ABL), and in ABL, we don't want you to give lectures and take notes; we want you to have your learning.

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• We prioritize seminars, workshops, laboratory, and study sessions that allow for closer interaction between teachers and students. We achieve this level of personalization through teaching in small groups and individual tutorials that mimic the professional world, allowing experimentation, ideas, teamwork and feedback" (UON, 2020).

The amount and use of time in the classroom has, so far, been the dimension that most resisted being modified in educational institutions. In general terms, Echeverría proposes "to dedicate as much attention to education at E3 as to the other two environments. The rule to follow is one third (of time, care, investment) for each environment" (2012, p. 200).

Distance education is a very illustrative example of technologies to change educational models, optimizing them with available technology. It is based on unidirectional communication produced first to the third generation (Table 1), whose technologies are book, audio, video, radio, and television. However, with the possibility of using the Internet from the fourth generation onwards, communication and interaction are bidirectional. This optimization of the educational process in distance education is due to the new technologies that have emerged. The fifth generation of distance education carries out training processes of greater personalization, interaction, and feedback according to the characteristics of each student.

Table 1. Distance education models

Generation	Model	Technologies
1st: 1850-1960	Correspondence	Print Self-instruction text
2nd: 1960-1985	Multimedia	Print Audio tapes Video tapes Computer-Based Learning
3rd: 1985-1995	Tele Learning	Audio conference Video conference Audio-graphic communication Radio broadcast / TV
4th: 1995-2005	Flexible Learning	Interactive online multimedia Internet access to resources Communication technologies (e-learning)
5th: 2005- …	Intelligent Flexible Learning	Interactive online multimedia Internet access to resources Use of automatic response systems through communication technologies Access to services and resources through an Institutional Portal and m-learning.

Source: Based on Farrerons and Olmedo, 2016

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The use in education of E3 that we have highlighted so far, several other activities that were traditionally carried out at E2, in the face-to-face network of family, friends, and social organizations, are now moving to E3 and moving between E2 and E3. In addition, a study carried out in Mexico, Spain, and Chile (GARZA; PEÑA; LÓPEZ, 2019) shows that young people mainly use digital media to obtain information and participate in policies.

In another longitudinal study, Rosenfeld, Thomas, and Hausen (2019) found that, for heterosexual couples in the U.S., online dating has become the most popular way to get to know each other, obfuscating dating through friends. The study data shows that between 2009 and 2017, approximately 40% of heterosexual couples met online. Among the gay community, the number is even higher. Thus, retrieving the distinction of Rheingold (2000), more than cyberspaces are created in cyberspace, in which people can reach a high level of friendship, without counting the proximity of E1 and E2.

A new social space created at E3 is the typical Student Portal of each university that overcomes the limitations of classroom teaching in the interactions between teacher and student and student and group. It allows the portal not to limit the contact between teacher and students to a fixed space and time, recreating what was worked on in the classroom based on the possibilities of E3 technologies. It gives the opportunity of rescuing the individual and asynchronous reflections of students and teachers for the learning community.

Disorders in/with the Third Digital Environment

The advantage of using the concept of an E3 is that it helps us make it more evident that new technologies allow a new territory. There, we live and live together, in which virtues and defects typical of human coexistence are reproduced, and several new ones, specific to coexistence in and with telematics technologies. Living in an era of constant technological developments has changed social communication and social relationships to virtual environments. It is estimated that people who are now 21 years old:

- Watched 20,000 hours of television.
- Played 5,000 hours of video games.
- Talked for 5,000 hours on their smartphones.
- Sent and received 250,000 messages.

With this significant exposure and time of use, socialization processes are taking place on digital platforms. Ma Kukuoglu (2019), are being transferred to the virtual environment, for exam ny harmful elements experienced in the social life of E2, according to Eraslan and ple, aggressive behaviors. The abusive use of specific technological tools ends up being configured, in many cases, like addictions or digital pathologies. We highlight some of them identified by García-Umaña, Casas, and Pérez (2019): cyberchondria or digital hypochondria, sleep disorders, social isolation, nomophobia, digital narcissism, among other mental and behavioral disorders.

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Nomophobia, presented as a habit and digital addiction, comes from the English word composed of phobia without a smartphone, which means fear of losing or being without a phone (diminutives No-Mo, or No-Mobile). Several researchers identified nomophobia as a disorder of the 21st century due to the emergence of numerous technological devices that, despite its definition, do not include computers. They argue that they are replaced by smartphones (GARCÍA-UMAÑA; CASAS; PÉREZ, 2019).

The pathology of Fear of Missing Out (FoMO) is seen as a pattern of behavior. The individual has a constant need to check the account and follow the latest developments on social networks. Another pathology is Pathological Internet Use (PIU), an Internet addiction disorder. According to Kobayashi and Hsu (2019), these pathologies are explained because obtaining information acts on the brain through the production of dopamine. Finding information on the Internet gives us the same kind of satisfaction as money or food. For the brain, information is its own reward, whether it is valuable or not. A distinction should be made between knowledge and information. Knowledge is internalized, structured, and can only grow slowly, it is only human, and it leads to action. However, the information is external; it has no form; it is quickly accumulated, automated, and inert.

In today's world, billions of people use social media channels for a variety of purposes. A big virtual world is created from thousands of utilities and pipelines. People who socialize on social media communicate less often in everyday life and gradually become social in real life (ERASLAN; KUKUOGLU, 2019).

As a social entity, young people believe that social competence can be considered a basic need. Based on this need, Tunc-Aksan and Akbay (2019) highlight that social networks can be seen as an environment in which an individual who does not feel competent, in the social sense, can express himself better to provide this sense of competition. Thus, we are facing a paradox expressed by Cerrato and Figuer (2010), and the media conquered the children, but they are the ones who dominate these media.

Training Challenge of the University Immersed in the Third Environment

We can verify two realities of our time. One is that a computer without Internet, without a connection to E3, is of little use today. Another fact is that technologies have not had the same impact on all areas and institutions of society. For example, a scientist, a soldier, a 19th-century doctor would be unable to manage an operating room in a laboratory on a battlefield today. But, on the other hand, a teacher would have no problem adapting, in front of the blackboard, chalk in hand.

E3 is life itself, and it is not just a technological environment or resource; it is life itself with the opportunities and problems we are analyzing. In this technical context, teachers are affected by technologies, both for personal use and in the teaching and learning process. Sousa (2020) examines WhatsApp, one of the most popular social networks globally, on the

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quality of life of teachers, showing negative or positive influences associated with the purpose of use and the emotional reactions provoked in its users. Sousa (2020) concludes that WhatsApp can positively influence moderation and a negative influence if its use causes anxiety or distracts attention in daily activities. It is also presented as a relevant resource to promote health and develop innovative educational actions. Likewise, Tunc-Aksan and Akbay (2019) confirm that when the level of smartphone dependence and the fear of losing decreases among students, the perceived academic proficiency improves.

The profile of students served by universities has diversified, especially in the last two decades, the cause of E3. New generations of university students, particularly Generation Z, born after 1990, "from the English term zapping, switching TV channels, accessing the Internet, videos, smartphones (...), were born with the arrival of the Internet and the development of technologies, these resources being close to most of them" (ANDRADE et al., 2020, p. 4). These students learn fluently in E2 and E3; therefore, this integration of the two environments is becoming the new normal for some universities. On the other hand, due to technologies, they access higher education through e-learning or b-learning modalities. Different age groups correspond to the generations that grew up with similar technologies before the emergence of the Internet and digital technologies: Baby Boomers (1946-1964) and the Silent Generation (1923-1945).

There are already countless educational projects globally to keep the elderly active and better physical and mental health. For example, the Global Network of Age-Friendly Universities can find a list of universities in America, Europe, and Asia offering educational programs for older adults. In addition, Spain's Jaume I University has created a virtual campus for the elderly to tackle the digital divide and social exclusion of the elderly. Both groups present training challenges for the university to avoid procrastination, an undesirable behavior by companies. Otherwise, it helps prevent mental and behavioral disorders documented in this study by generating strategic contexts of communication and interaction in the E2 and E3.

The university's learning space until the 20th century is unequivocal that it was E2, now it is no longer. For example, the BYOD practice (Bring Your Own Device) (STUMPENHORST, 2018) is responsible for access to technology and students' learning content, with which the challenge of universities, instead of equipping them with new computers, is ensuring a quality Internet connection via Wi-Fi in all spaces, inside and outside the classroom, since virtually all university students have access to the essential technologies for your academic success.

We agree with Zubizarreta and Caldeiro (2019) that it is not about exercising overprotection and limiting access influenced by the fact that children and young people live in technologically equipped homes. In this sense, it is urgent to carry out pedagogical processes to develop the knowledge and skills necessary to know how to read and write online and, thus, participate in the wide world of E3's production, research, and information management. The technological literacy of children, young people, and adults become

essential (RODRÍGUEZ, 2018). In Brazil, in a 2018 study, only 51% of children aged 11 to 12 years recognize that they can verify that the information found on the Internet is correct. In the 13 to 14-year-old group, it increases to 71%. The 15 to 17-year-old section rises slightly to 76% (CGI.BR, 2019b), evidencing a notable gap is an essential skill in the management of information available on the Internet.

A widely disseminated methodology can serve as an example to synthesize the pedagogical relationship that we can establish between E2 and E3 in university and school education. We refer to the Inverted Classroom, which leaves individual and collective spaces divided and related. We will use the taxonomy of Marzano and Kendall (2007), an evolution of Bloom's taxonomy, to explain the pedagogical intention of using different spaces.

The first moment is held in the personal space (Knowledge and Understanding), remembering and categorizing the information. This is where the teacher uses and provides guidelines for the most appropriate use of technologies. The second moment corresponds to the group's space for socializing in the classroom (Analysis to create new knowledge and knowledge in specific situations). Although we are individuals and, in this way, we learn, our performance is social and, as such, we operate in life. A world without networks is no longer conceived. By taking our learning from the unique space to the classroom, students can socialize their learning and discuss it with their classmates when they share the promotion in the next two steps. Finally, in the third moment, the group space for creation (classroom), achieved, based on Marzano and Kendall (2007), metacognition controls the thought processes, establishes goals, and makes decisions and self-awareness: attitudes, beliefs, feelings, assesses the importance, effectiveness, emotions, and motivation.

E3 enables the creation of new logic, new strategies, and new learning experiences. Language students can interact via social networks with anyone in the world who is studying the same language and at the same level of proficiency. We can take the testimonies of scientists, artists, professionals, entrepreneurs to the classroom through videoconference, and dialogue with them, generating new experiences better connected to the expectations and experiences of 21st-century students. ICTs facilitate communication networks and improve the bond of students and other local organizations around common goals.

Final Considerations

Answering the questions at the beginning that address aspects that we propose to highlight, E3 presents possibilities and opportunities that have not been created for higher education until now. Technology is getting easier to use; students and teachers are learning for themselves, but learning to write well, use math or think critically, remains as challenging as ever.

Technologies quickly become obsolete, so the purpose is not to win a technological race, but to think about the most appropriate pedagogical structures, enhanced by technologies, makes sense in the new scenarios of E3, which can be considered a paradox:

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new technologies have produced a recent crisis in the role of the teacher, they do not threaten the figure and the role of the teacher or the face-to-face instance of E2, but it is revitalizing, opening up opportunities for pedagogical and didactic innovation.

It is clear that the future of education requires many substantial changes; we emphasize two, in the teacher and the classroom. First, the E3 teacher does not immerse himself in his knowledge but learns to know his students' way of learning. Second, he does not explain his studies and expertise but uses them as an architect for the scaffolding that will lead his students to the planned results; as a curator, he selects the most appropriate and pertinent resources available in E2 and E3. Precisely in this planning and curation is the performance of the E3 teacher, who must use them to design didactic models that motivate students to organize themselves, with increasing degrees of autonomy, learning, and teacher to evaluate and provide feedback on their progress.

E3 technologies, one of which is the Internet, enable two-way communication and interaction between people and resources, generating new dialogues and content, interacting with authors, and passing from a passive receiver to an active author. This is different from unidirectional technologies, with a receiver passive, which appeared before the Internet, such as radio, cinema, television, video, and educational programs in different media. However, they deceived in transforming education seeking massive training to replace the teacher. And technological tools continue to fail in this attempt (WATTERS, 2019) because the essence of the human form must be mediated by another human being using technologies, which in the case of E3 can place the student at the center of the training process.

E3 generated new contexts and environments that facilitate and sustain learning, promote interaction, collaboration, and construct a feeling of belonging among community members. A dynamic, flexible, and adaptable process occur (LÉVY, 2009). We are already witnessing the classroom use as an extension of the online learning community and vice versa. However, Cabero reminds us "we are carrying out actions in virtual classrooms, very similar to the actions we take in face-to-face classrooms" (2012, p. 2). Technology is being changed, without the integration of pedagogical principles, in a techno-pedagogical confluence.

Although we have verified the omnipresence of E3, access is unequal, both to the connection, for example, broadband availability, to the devices, the abilities to search, select, use and produce information and to the technology itself. In addition, user practices are incorporated into a network formation structure in which the private logic of large corporations predominates. "The more we consume, share and publish content, the more we generate data for commercial and political use and, finally, to modulate our behaviors" (PIAZZON; LIMA; OYADOMARI, 2020, p. 57).

E3 technologies facilitate the customization of training design. The personalization of teaching is not new, but the current technologies allow to automate the opportunities for formative assessment, supporting the creation of differentiated strategies, pre-defined and

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available automatically, for groups of students or individually, based on the results obtained in the process. Furthermore, without going into details on each one, the technological platforms used by universities have a standard of tools to automatically generate reports of student participation. This analysis of the record of each student's actions and progress can help to recognize patterns and styles, rhythms, and profiles to support the development of more efficient educational systems significantly. In addition, documentation of the teaching-learning process can help the institution's strategic projects.

This production of large volumes of information at E3 is creating challenges for universities in several dimensions. One of them is the creation of qualitative and quantitative models of analysis. From these data, it becomes possible to develop narratives of how students learn and how they learn. To face these challenges, all actors involved must develop skills to record, understand, and use E3 systems' data. Then, based on this collected and analyzed evidence, they support decision-making at all levels.

Users' relationship with technology is still very new and immature for children, young people, and adults. Social networks, the main component of E3 used by children and young people, require special attention and training due to obtaining a large volume of information that acts on the brain through dopamine production. For the brain, information is its own reward, regardless of whether it is valuable or not, which explains the high average hours of connection with social networks, leading to the emergence of pathologies. To avoid such behaviors, it is necessary to provide emotional control training.

There is a need to transform universities, learning to use and integrate technologies to meet the social and economic environment in which future professionals in training will act, based on the information economy. At the university, training and researching with technologies is the new normal, the new traditional training. Thus, for example, when establishing a comparative axis between the most prominent companies of the 20th century and those of the 21st century, among the ten leading companies of the 20th century, only one had a direct relationship with E3, with oil and automobiles being its essential goods and its central electricity production resource. In contrast, in the 21st century, nine of the ten companies are already born at E3. Their existence is possible thanks to information management at E3, and their primary production resource is the Internet. Thus, the Net is the environment where those professionals trained by the universities will be inserted.

We can educate ourselves in this virtual space at E3. Learning is a way of being in the social world, not just a way of getting to know it. Harnessing the potential of E3 through modalities such as e-learning or b-learning is not the way institutions should seek to reduce costs. It requires considerable investment to be implemented (MESTAN, 2019) because E3 ceases to be a unidirectional medium. It is transforming itself into a social space in which people can participate in multidirectional networks. They don't have to be tech-savvy users or know to program. At E3, technology is invisible.

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