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SCHOOL SPACES AND ARCHITECTURES

THE CLASSROOM REVISITED: THE INNOVATION OF EDUCATIONAL SPACES FROM A COMMUNICATIVE APPROACH

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ABSTRACT²: In the last two decades there has been a growing interest in the subject of educational spaces due to the empirical projects that have been gaining ground and have been adopted globally in various educational institutions. However, it seems that few contributions can be subtracted from the communicative field when examining the theoretical and conceptual foundations of this topic. The present text is a critical review of studies on educational spaces with the aim of incorporating into the academic debate some elements of communication and, thus, to reinforce the interpretative frameworks of this phenomenon. The proposed methodology is a documentary approach through discursive analysis and observation of four projects related to classroom innovation. Mainly, it is noted that efforts are being made to change the unidirectional or analogous -metaphorically speaking- communicative model that prevails in conventional classrooms, as well as to promote spaces more closely linked to the digital culture expressed in the interaction and appropriation modes of young people. In this sense, educational communication can provide broad conceptualizations to enrich research on educational spaces.

Key words: educational spaces, communication, classroom, innovation.

A SALA DE AULA REVISITADA: A INOVAÇÃO DOS ESPAÇOS EDUCACIONAIS A PARTIR DE UMA ABORDAGEM DA COMUNICAÇÃO

RESUMO: Nas últimas duas décadas, houve um crescente interesse na questão dos espaços educacionais, devido a projetos empíricos que vêm ganhando espaço e têm sido adotados em diversas instituições de ensino em todo o mundo. No entanto, há poucas contribuições que podem ser subtraídas do campo comunicativo ao examinar os fundamentos teóricos

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conceituais deste tema. Este texto é uma revisão crítica dos estudos dos espaços educacionais, com o objetivo de incorporar alguns elementos de comunicação ao debate acadêmico e, assim, fortalecer os marcos interpretativos desse fenômeno. A metodologia proposta é a análise documental com enfoque nos discursos e na observação de quatro projetos relacionados à inovação em sala de aula. Principalmente, nota-se que estão sendo feitos esforços para mudar o modelo comunicativo unidirecional ou análogo – metaforicamente falando – que prevalece nas salas de aula convencionais, além de fomentar espaços principalmente ligados à cultura digital expressa nos modos de interação e apropriação dos jovens. Nesse sentido, a comunicação educacional foi capaz de proporcionar amplas conceituações para enriquecer a pesquisa sobre espaços educacionais.

Palavras-chave: espaços educacionais, comunicação, sala de aula, inovação.

EL AULA REVISITADA: LA INNOVACIÓN DE LOS ESPACIOS EDUCATIVOS DESDE UN ENFOQUE COMUNICATIVO

RESUMEN: En las últimas dos décadas se aprecia un interés creciente por el tema de los espacios educativos debido a los proyectos empíricos que han ido ganando terreno y se han adoptado, de manera global, en diversas instituciones educativas. No obstante, parecen pocos los aportes que se pueden sustraer del campo comunicativo cuando se examinan los fundamentos teórico conceptuales de esta temática. El presente texto es una revisión crítica sobre estudios de espacios educativos con el objetivo de incorporar al debate académico algunos elementos propios de la comunicación y, con ello, reforzar los marcos interpretativos de este fenómeno. La metodología propuesta es de corte documental mediante análisis discursivo y observación de cuatro proyectos vinculados con la innovación del aula. Principalmente, se hace notar que se está procurando cambiar el modelo comunicativo unidireccional o análogo –metafóricamente hablando– que impera en las aulas convencionales, al igual que propiciar espacios mayormente vinculados con la cultura digital expresada en los modos de interacción y apropiación de los jóvenes. En este sentido, la comunicación educativa puede aportar conceptualizaciones amplias para enriquecer las investigaciones sobre espacios educativos.

Palabras clave: espacios educativos, comunicación, aula, innovación.

INTRODUCTION

The stories that, in the form of parody, show that certain work environments in appearance and organization have remained virtually unchanged for decades are quite well known. Schools and classrooms are a repeated example. Seymour Papert, in his book *The children's machine: rethinking school in the age of the computer*, narrates the famous anecdote of a group of friends - surgeons and teachers - from the early 20th century who, wishing to see how much their profession would have changed in the future, travel back in time only to realize that surgeons would be unable to perform their work due to the great technological advances in this area, while teachers, in general terms, could perform their work without major problems (PAPERT, 1993).

Similarly, Time magazine, in an article entitled *How to bring our schools out of the 20th century*, picks up on this story by relating what it would be like for a time traveler, using the character of Rip Van Winkle, if he were to move from the early years of the 20th century to our era. The text narrates that, at first, he would be surprised by the number of innovations present today: airports, hospitals, shopping malls, technological devices, etcetera. However, upon entering a classroom he would remark: "this is a school, we used to have them in 1906, only at that time the blackboards were green" (WALLIS; STEPTOE, 2006, p. 50).

Undoubtedly, the above comparatives shed matter for analysis of various kinds, although the latent pointing suggests that the classroom is a type of model made in the last century and that it operates with certain characteristics that need to be transformed as the educational demands of the twenty-first century evolve. For example, Castro (2015) mentions that school spaces and architectures are a representation where pedagogical and political ideas are condensed and reflected, although in the same way, others are hidden and overlooked.

It is worth remembering that, with the massification of education in the first decades of the last century, the classroom as a primordial educational space was the result of the socio-cultural contexts where it emerged: a moment that had to meet the growing access of the school population and the application of a specific curriculum program through standardized techniques to make time and space more efficient. Consequently, today's school is heir to the educational and communicative practices that survive in the classroom. And without going any further, the simplest concept of the classroom, although at the same time the most symbolic and culturally charged, is the one that designates it as the main and most important place for learning (BROWN, 2005).

Today, the criticism of the classroom space is that its structure, design and organization have installed a series of outdated practices, which need to be reevaluated. According to Scolari (2011), there is a gap between a dynamic and hyper-informed extracurricular reality and the slow and mono mediated times of the school institution. For his part, Silva (2008) argues that a communicational environment similar to that of television prevails in classrooms, that is, based on pedagogies of transmission, individual and contemplative reception. The metaphor is simple, the school is a space that works like the traditional or analogous media: models of communication and interaction with a single interlocutor (teacher) speaking to passive audiences (students). We could say, then, that the type of classroom organization and design infers a teaching mode with characteristics such as: a) uniformity, which is expressed in the way students are arranged to learn the same contents at the same time; b) unidirectionality, whose particularity lies in a linear communication and a single sender, and c) centrality, placed on the figure of the teacher as the protagonist of the learning process (SILVA, 2008; APARICI; SILVA, 2012 CORREA; DE PABLOS, 2009).

In this context, it is possible to see that the classroom is the scenario where certain pedagogical and communicative methods with industrial reminiscences are carried out. As Dussel (2010) states, historically the school pedagogical organization:

[...] was structured on the basis of the frontal method, that is, a front-centered arrangement, with a point of attention on the adult figure and on a visual technology such as the blackboard, the poster or the religious image, which ordered the exchanges while establishing an asymmetrical and radial relationship between the teacher/adult and the students/children (DUSSEL, 2010, p. 17).

The demand today lies in an unavoidable revision of the classroom to make its space work in favor of an educational practice that does not restrict students to watch, listen and remain silent - as an impassive audience - but rather serves as a catalyst for didactic, communicative and interactive innovations. This is articulated, in parallel, with the perspectives of the use and appropriation of digital technologies in education, which are intended to be factors for the dissemination and collective generation of knowledge through interactive and networked forms of communication and learning.

Since the last decade there has been a noticeable increase in articles, papers, books and even journalistic articles that address the issue of educational spaces. As a result, there has been a constant call: it is necessary to change, innovate or expand the classroom. We would say then that there are prolegomena in the study of the school space, which are carried out mainly from pedagogical, historical, sociological and architectural approaches. Within this context, it makes sense to incorporate essential fundamentals of communication, to the extent that such spaces are promoted as alternatives that improve aspects such as interaction, participation, collaboration, dialogue and with an almost inevitable presence of digital technologies.

It is also prudent to note that a common denominator underlies recent studies on the educational space: any transformation that takes place in the classroom entails a change in the practices that take place in it. In the publication *Designing Spaces for Effective Learning: A Guide to 21st Century Learning Space Design*, a reasoning along these lines is established: "Spaces are themselves agents of change. A modified space will change practice" (JISC, 2006, p. 30). In other words, when we speak of educational spaces, we are faced with a phenomenon that seeks to coin alternative forms to those of traditional classrooms and thus encourage educational practices aimed at improving teaching and learning processes. In such a way that the intentionality of innovating or transforming an educational space, such as classrooms, will invariably affect communicative practices due to the fact that interactions are modified, the hierarchies of educational agents are moved, participation and collaboration are stimulated. It is natural to understand that the latter evokes the interpretative frameworks of educational communication or educommunication.

It is true that universities all over the world have expressed very varied ideas about the renewal of their educational spaces, although certain types that have been gaining notoriety are on the horizon. Thus, this paper reflects on and analyzes some empirical experiences on educational spaces in different institutions under the epistemological lens of educational communication, which is noticeably absent in the discussion of this phenomenon. Through a broad-spectrum documentary study (articles, videos, reports) it is possible to offer arguments to reason about the value of the communicative field that is required in the research of this subject.

Thus, the aim of this text is to achieve a theoretical systematization and build an analytical scheme of educational spaces from the communication approach through a review of empirical experiences in schools. To this end, the analysis of four types of educational spaces is considered: *active learning classroom*, *future classroom lab*, classroom of the future and

learning architectures. What is of interest is to observe how different notions of the communicative field are manifested in these cases and, with this, to add new approaches that contribute to the understanding of this topic.

A BRIEF REVIEW OF THE NEW EDUCATIONAL SPACES

It is true that educational communication is the area that has focused most on studying the way in which the media (analog and digital) have been introduced into the school and, of course, the classroom is one of its main areas of work. Although, perhaps, this same field has not given due attention to the issue of educational spaces as a whole, being a subject that seeks to expand the physical, cultural and communicative approaches of the so-called traditional classrooms.

And while in Latin American regions the issue of educational spaces is usually linked to the purely aesthetic or equipment, in other regions, for example, it has been raised as an institutional task of gradual transformation. Without going any further, Kariippanon, Cliff, Lancaster, Okely and Parrish (2019) point out that in Australia, at least 25% of classrooms can no longer be classified as traditional and boast a feature that adjudicates them as new educational spaces or learning spaces for new generations.

However, talking about educational spaces is a rather open topic in educational discourse, but there are already defined lines of action in empirical projects that have become relevant in recent years. The aim of these projects is to innovate or reconvert the classroom and create spaces capable of promoting active learning, supporting collaborative work as a formal practice, providing a personalized and inclusive environment, as well as being flexible to the changing needs of educational scenarios (BROOKS, 2011).

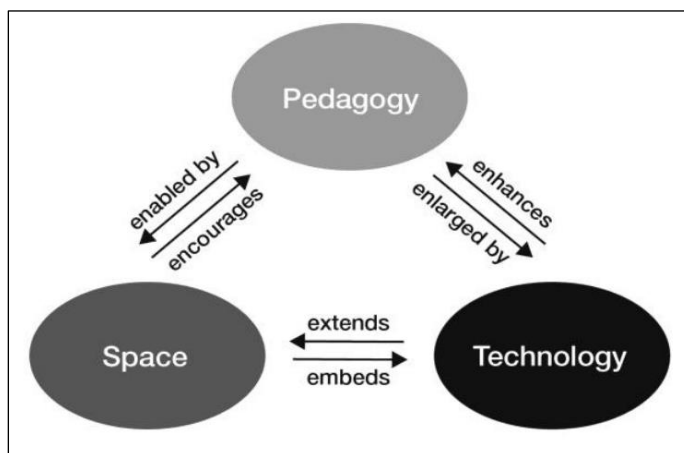
The book edited by Oblinger (2006) is a reference for this topic, since in his publication *Learning Spaces* the theoretical relevance of spaces in current educational times is glimpsed. This approach promotes a field of study that emphasizes:

- Having an institutional vision.
- Consider various types of information and carry out the pertinent analyses before beginning any space design.
- Consider design principles in terms of their impact on such spaces.
- The need for constant evaluation for continuous improvement of current and future spaces (OBLINGER, 2006).

In our understanding, an educational space can be defined as a catalyst of pedagogical practices (linked to active, collaborative, constructivist learning processes); communicative practices (linked to dialogic processes, exchange, conversations) and interaction practices (linked to the appropriation of digital technologies to have a networked ecosystem). It is in higher education where the design of spaces that modify the common denominator of the classroom has been most explored, although interventions have recently taken place in elementary and secondary education.

It is worth mentioning that Radcliffe (2009) proposed a referential framework for the design of these new environments, arguing that space, pedagogy and technology are the three guiding principles from which this phenomenon should be approached. He emphasizes that this triad should guide the changes required in classrooms, and that innovation should observe social changes, the patterns of younger generations, emerging technologies, as well as student-centered learning models (RADCLIFFE, 2009). The framework proposed by the author (Illustration 1) suggests not a particular model or design of space, but rather a reference for decision-makers, teachers and educational authorities to consider when building a project of these characteristics.

Figure 1. Reference framework for the design and evaluation of Pedagogy-Space-Technology (PST) learning spaces.



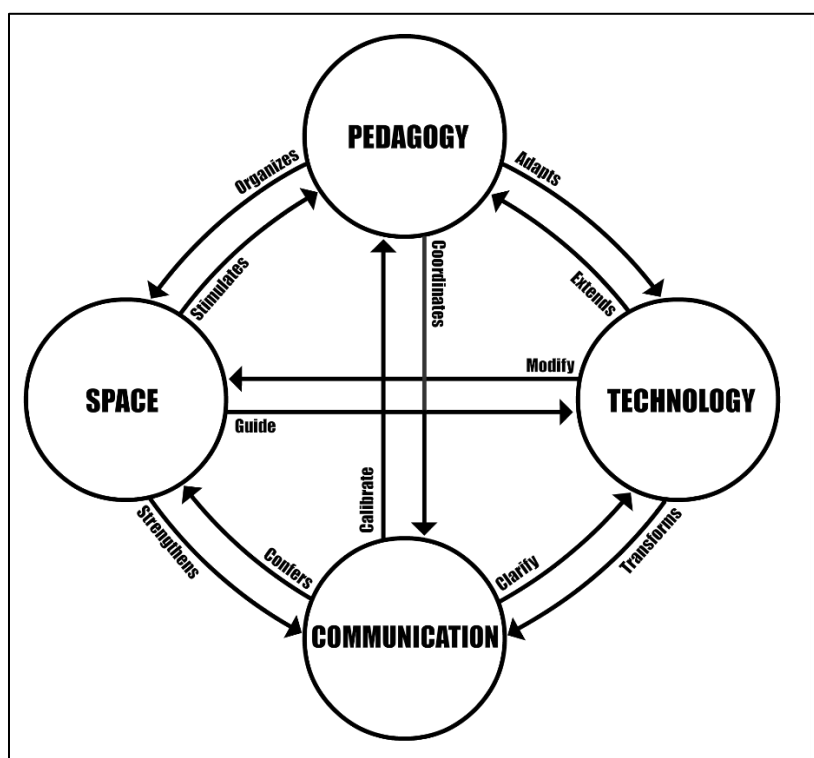
Source: RADCLIFFE, 2009.

A reformulation of the previous scheme can be seen in Hernández Gutiérrez (2015) where the dimension of communication is added, since it is understood that every educational space is a communicative space and, therefore, the intentionality of innovating the classroom tries to:

- thinking about a teaching practice that implies moving from the pedagogy of transmission to communities of exchanges and conversation;
- establishing active learning methodologies that make it possible to move from didactics of memorization and reception to organizations of collaboration and participation;
- articulating technologies and media that enable creative appropriation and a dynamic of interactivity; and,
- create a flexible and motivating space that is an enabler of gradual interaction processes.

Thus, in Illustration 2 it can be seen that the study of educational spaces is situated in a perspective that takes into account the physical connotation (i.e., the classroom space -including other places in the school center-) as an object of study where the relationship and interconnection that such environments provide in the pedagogical, communicative and didactic practice, supported by the use of digital technologies, is analyzed.

Illustration 2. Study dimensions of educational spaces.



Source: HERNÁNDEZ GUTIÉRREZ, 2015.

THE PANORAMA OF EDUCATIONAL SPACES

At this point, it is important to affirm that the study of educational spaces invites us to reevaluate the role played by certain types of classrooms and their physical environment in order to propose alternative ways to innovate their organization. Accordingly, Gabriel Rshaid emphasizes that most of the current classrooms or classrooms are not designed to deploy pedagogies designed for the needs of the 21st century, since, emphasizes the author: "Anyone who walks through a classroom can notice that there are things about the physical space used for teaching that need to be changed" (RSHAID, 2011, chapter 7, para. 1). In this sense, the criticism falls on the dynamics that have been generated, where lectures, immobile chairs facing the front where the teacher is located and activities that evoke the transmission of information in a unidirectional manner predominate. Referring to this typology, there are more and more voices that warn that if we want to promote more active and participatory methods of teaching and learning, it will be necessary to think seriously about altering and innovating this educational space.

It is true that encompassing the new classroom prototypes or models is an arduous task that disrupts several areas of study. Therefore, methodologically, the writing of this paper has a conceptual delimitation, which is located in the identification of projects whose objective is the intervention, modification or innovation of the classroom to provide a new educational space. The analyses presented here come from a wide specialized bibliography, since they are the results of research that has been published in academic journals, chapters and books. There is even a scientific journal focused on the subject (see *Journal of Learning Spaces* of the University of North Carolina at Greensboro). In addition, there is a wide range of video materials where it is possible to observe interviews, reports and chronicles, which favors the approach for the qualitative analysis. Thus, based on the empirical experiences that have been explored, it is possible to make a classification in which designs based on: a)

active learning; b) learning zones; c) technology with interactive interface; and d) learning architectures stand out.

Educational spaces based on active learning

This perspective encompasses the creation of flexible spaces with a layout that promotes active learning and collaborative work. These types of classrooms are, perhaps, the ones that have been most replicated globally. Whiteside (2014) even states that these models are in a mainstream adoption stage, since it is a trend that has gained notoriety in a broad sector of universities.

This type of learning space emerged towards the end of the 1990s, at the Massachusetts Institute of Technology (MIT), thanks to the initiative of a team led by Dr. John Belcher, professor of physics in the Astrophysics Department of this institute, and two of his collaborators. They set out to make a series of educational innovations in the first-year physics course through a method they called interactive participation or active learning. The project, called *Technology Enabled Active Learning*, TEAL, arose primarily to counteract the mismatch between traditional teaching methods and the way students actually learn (DORI *et al.*, 2003).

Although it is understood that this type of space has a similar design, universities have coined their own names for their active learning classroom projects. For example, *Technology Enabled Active Learning* (TEAL) at the Massachusetts Institute of Technology; *Student-Centered Active Learning Environment for Undergraduate Programs* (SCALE-UP) at North Carolina State University; *Transform, Interact, Learn, Engage* (TILE) at the University of Iowa; and *Active Learning Classroom* (ALC) at the University of Minnesota and McGill University stand out. Although ALCs are arguably the best-known designation.

Following the ideas of Brown (2005), an active learning environment should offer the opportunity to deploy didactics of discovery learning, exploration, experimentation, critique and analysis, so that it is possible to assess one's own learning, allowing students to make decisions about the course, as well as to reflect on and evaluate their progress. Among the characteristics of these classrooms are: circular work tables to promote collaboration among students; ample spaces to place whiteboards; screens throughout the classroom to facilitate technology-mediated activities; and a workstation for the teacher at the center of the place to allow his or her movement throughout the space (VAN HORNE; MURNIATI, 2016).

For their part, Cotner, Loper, Walker and Brooks (2013) argue that, in the case of the University of Minnesota, it has been worth the investment made in ALC, since it has been demonstrated in experimental studies the increase in motivation and in the percentage of school grades by students. However, they also add that the investment in ALC versus documented improvements need to be judged and analyzed by each institution based on their specific priorities, resources and contexts.

Among the changes that are manifested in educational practices in LACs, it has been pointed out that teachers tend to incorporate other types of learning didactics (more collaborative) and rely more on digital technologies; in addition, students tend to prepare the material in advance and follow up on class activities, as they have greater authority to share their work (VAN HORNE *et al.*, 2014).

Educational spaces based on learning zones

In this line, modular spaces are structured under the idea of offering differentiated places based on the teaching or learning objectives required. These models are influenced by the perspectives of learning styles. The original idea comes from the *European*

Schoolnet, a non-profit organization that brings together 34 European Ministries of Education with the aim of innovating teaching and learning methods. This organization gave birth to the *Future Classroom Lab* (FCL) project, in 2012, with the purpose of being a space:

[...] that invites visitors to rethink the role of pedagogy, technology and design in their classrooms. Through six learning zones, visitors can explore the essential elements expected for 21st century learning: student and teacher skills and roles, learning styles, learning environment design, current and emerging technology, and social trends affecting education (EUROPEAN SCHOOLNET, 2016, p. 1).

Thus, the FCL planned and designed an experimental space that would break the traditional classroom structure to propose a flexible space where zones coexist that allow the implementation of an innovative educational practice. According to the document *Future Classroom Lab Learning Zones* (EUROPEAN SCHOOLNET, 2013), the zones that compose it are:

1. Investigate. Teachers can promote inquiry- and project-based learning to enhance students' critical thinking skills, as it encourages them to discover for themselves and gives them the opportunity to be active participants rather than passive listeners.
2. Create. This zone enables students to work with real knowledge creation activities by allowing students to plan, design and produce their own work, e.g., a multimedia production or presentation.
3. Present. A space that fosters a set of communication skills and technical skills to present (face-to-face, interactive or online) results and information to their peers, and to obtain feedback on their work.
4. Interact. An area that focuses on enhancing interactivity and student participation in traditional learning spaces by using technology (individual devices, such as tablets and smartphones, to interactive whiteboards and interactive learning content) to actively engage them.
5. Exchange. In the classroom of the future, the ability to collaborate with others through teamwork in research, creation and presentation activities is important. Information and communication technologies (ICT) can help create richer forms of communication and collaboration, where everyone assumes their proper role, and there is shared responsibility in the decision-making process.
6. Develop. The development zone is a space for informal learning and self-reflection, where students carry out school work in an independent, self-directed way and at their own pace. In this way, they can learn informally while focusing on their own interests outside of formal classroom settings, both at school and at home.

In the case of the FCL, the spaces were intended to promote new teaching models in the teaching staff and thereby enhance students' abilities to better face the challenges of their social and labor future; challenges that the European Commission has pointed out in various reports (TENA; CARRERA, 2020). As described above, the FCLs have a space devised by zones that encourage diverse learning spectrums. In fact: "The particularity of the FCL with respect to any other type of classroom is that this space is configured to favor interaction among peers, work the practical sense of ICT and become familiar with the phases of any research" (TENA; CARRERA, 2020, p. 455).

One of the first educational organizations to implement this classroom model, in 2017, was the National Institute of Educational Technologies and Teacher Training (INTEF), belonging to the Ministry of Education and Vocational Training of the government of Spain, under the name of the Classroom of the Future following the notions of the FCL.

Technology-based educational spaces with an interactive interface

One of the main characteristics of this type of space is the creation of a physical environment where various digital technologies are established for the development of teaching and learning experiences mediated by an interactive interface. Although in the examples described above, digital technologies are an essential component as a means for the construction of knowledge, in this case a particular space is designed to host specific developments.

An example of this model is the Classroom of the Future project of the Institute of Applied Sciences and Technology of the National Autonomous University of Mexico (UNAM). The main issues that drove this project were the search for devising innovative educational spaces; the development of interactive spaces; the correct incorporation of collaborative work, as well as the integration of ICTs in the educational process (GAMBOA, 2017). CCADET's Future Classroom originated in 2007 led by Fernando Gamboa with the purpose of experimenting and testing new collaborative spaces.

According to these premises, the educational space should be rethought through flexible practices, where the elements involved in its composition -teacher, students, infrastructure and ICT- can establish synergies and maximize the benefits of the learning space (GAMBOA, 2015). Not in vain has it been reiterated that the new educational dynamics require environments that, enhanced by technologies, disrupt models based on the industrial society and shape new learning, communication, interaction and collaboration experiences in a global and connected context.

Gamboa (2017) indicates that there are four principles that govern the Classroom of the Future project:

- Design of innovative educational spaces, enriched with technology. He refers to the analysis and criteria to be considered for the development of projects that redefine the articulated space with the incorporation of technology.
- Development of technology to create interactive collaborative spaces. Technological creation work with the purpose of conceiving hardware and software that allow the implementation of collaborative activities. This has generated technologies such as: collaborative desktop, collaborative surface and collaborative wall.
- Technopedagogical model that supports the use of ICT in the educational process. It highlights the stages that must be taken into account to carry out collaborative didactic activities that help teachers in the implementation and evaluation process.
- Accompaniment and induction for teachers. Training program with the objective that teachers transcend the idea of the instrumental use of some tool to think about new didactic dynamics with their students.

In short, the integration of this type of interface in the classroom entails a reconversion of the classroom. In the case of the Classroom of the Future, technologies are the pretext to promote pedagogical frameworks under a new way of looking at teaching and learning by creating a space for dialogue, consensus and collective participation.

On the other hand, it is relevant to point out that this project contains its own technological developments, which to a large extent forces the design of an educational space differentiated from the conventional classroom. Gamboa (2017) comments that the design of an interface that was developed (a desk/table with an interactive surface or an interactive wall) has five characteristics:

1. Interactive collaborative space.
2. Distributed control
3. Omnidirectional interfaces
4. Interfaces in human dimension
5. Mixed environments

Educational spaces based on learning architectures

Properly speaking, these projects seek to create educational spaces beyond the school classroom. In other words, the classroom can be anywhere in the school center, since the intention is to locate varied spaces to expand the notion of the classroom. It is noteworthy that in recent years schools such as Vittra (Sweden) and Ørestad College (Denmark), to mention a couple of examples, have attracted worldwide attention as quasi-emblems of modernity and innovation by making substantial changes in their physical and organizational dimension.

Rosan Bosch (2016) comments that in order to change the traditional educational paradigm it is necessary to modify the way of organizing the school, pedagogy and design. According to this logic, her architecture studio has intervened several educational institutions based on what she considers six keys that the school space must offer:

1. One-to-many communication
2. Reflection and concentration
3. Team and collaborative work
4. Informal exchange
5. Learning by doing
6. Movement

According to its postulates, we do not speak of classrooms but of learning architectures where the aim is to create spaces to promote and work on the skills required by students for the 21st century. That is, to move from passive students to active students through the freedom (physical and pedagogical) that schools provide, where architecture intervenes through a variety of spaces designed to make students feel in an open and less restrictive environment. In line with these ideas, Pardo (2014) considers that in 21st century education any space is a classroom and that "it is a mistake to design the entire pedagogical process privileging the planning of the classroom and class experience [...]" (PARDO, 2014, p. 125). Furthermore, he adds: "Formal education buildings are static, with pre-established designs and functions. In the factory school, permission must be sought to modify spaces" (PARDO, 2014, p. 141).

The idea of learning architectures expands and makes the design of spaces more flexible so that it is possible to expand didactics, communication and interaction through the adaptation of places that originally, in school buildings, did not have that function. Primarily, in the design of learning architectures, the proposal of four archetypal dimensions of spaces made by Thornburg towards the end of the nineties of the last century is rescued, which Rshaid (2011) explains as follows:

- Campfire or campfire. A space where learning takes place through narratives with a set of learners.
- Trough or drinking trough. Place where students congregate casually and informally to generate exchanges, collaboration, and peer learning.
- Cave. Refers to the space designed for individual and reflective study.
- Experiential. Laboratory, workshop or space designed to implement learning based on experience and learning by doing.

EDUCATIONAL SPACES TODAY: A REFLECTION FROM THE POINT OF VIEW OF EDUCATIONAL COMMUNICATION.

As has been noted, in recent times there has been a flourishing of empirical projects of educational spaces, which in turn would demand more than ever to subtract theoretical contributions from the communicative field. In this sense, the first communicative argument that stands out in the experiences of this phenomenon is related

to the type of communication model that prevails in the classroom, which, in turn, determines the organization and educational practices within the classroom. For example, Cano and Lledó (1990, in GAMBOA, 2015), for almost three decades ago, noted that the relevance of educational spaces implies thinking about an active spatial organization with underlying principles such as: fluid interaction capable of uniting the group; adequate contact with diverse materials and activities for cognitive, affective and social learning processes; capacity outwards, transcending the classroom walls and diversifying the possible scenarios, and inwards, with areas suitable for deploying specific actions, and with communication with cooperative and collaborative characteristics where everyone is a sender and receiver.

It is worth noting, in the first instance, that one of the elements present in the study of educational spaces involves the redefinition of the basic model of emission-message-reception, a process that up to now is still in force in the ways of conducting and organizing the classroom. In this regard, Scolari (2011) argues that education is heir to a mono media model: centered on the book; with the role of the teacher as a mediator of knowledge, and with a specific discursive order to carry out the teaching and learning process. In the same vein, we can speak of the existence of a transmissive pedagogy characterized as a teaching practice with a unidirectional sense, and which has much in common with the traditional media (SILVA, 2008; APARICI; SILVA, 2012).

The idea of the single speaker in the classroom or the enthronement of the teacher as the center of learning are preconceptions that need to be reformed in learning spaces. Silva (2008) suggests that for the construction of the classroom as a space in which the teacher can guarantee collective confrontation and collaborative learning, it is necessary to modify the conventional communication model of passive reception and consumption of preconstructed knowledge for students. We speak, therefore, of a communication produced by both, since there are no speakers, but interlocutors. Linked to the above, an example worth mentioning is that of the Institute of Design at Stanford University, where, according to Doorley and Witthoft (2012), classrooms have the quality of not distinguishing or differentiating between who is teaching and who is learning, since they seek to establish a status of equality in the institution between teachers and students.

Consequently, it is reiterated the comparison made of the conventional classroom with traditional media, where an invariability of the communicational model is attributed, since the structure, layout and organization are sustained in a linear and centralized mode. Thus, it has become evident that there is a gap between this "analog" space (the classroom) and the forms of culture that are emerging in the digital era, despite the fact that education is a field that has benefited from digital technologies. Hence, strictly speaking, the architecture of the classroom is the antithesis of the architecture of the network, since while the former moves under linear parameters of communication, the latter obeys hypertextual, hyper medial and continuous interaction forms. Therefore, making the classroom more flexible implies a break with its current communicative design to give way to new figures that reorient educational practices.

Following Silva (2008), it can be said that the language of the classroom is that of an analog medium, with all the communicative load that this entails. In a comparison between a traditional classroom and an analog media, we can interpret that in both cases, students and audience are predominantly situated as receivers. On the other hand, the role of the teacher evokes the centrality of the teaching process by acting as a transmitter of unidirectional messages in an act derived from the notion of the professorship; that reserved and exclusive place from where the teacher gives lessons to his students.

In short, as long as there is a single idea about how the classroom should look and be, we are replicating a type of scenario where a communicative model that is not very interactive prevails, which evidences the need to open this study horizon for educational communication approaches. Returning to the words of Rshaid:

The use, design and configuration of space within the school constitute personal and unique decisions for each educational community. But what clearly emerges is that a 21st century pedagogy can only be developed and implemented in spaces that need to be reconfigured beyond the industrial model of teacher-facing desks. And, returning to a primary tenet of architecture, in this context of education, function pursues form (RSHAID, 2011, chapter 7, section 18, para. 2).

Let us also note, then, that the approaches for educational spaces point towards an articulation with the surrounding reality, that is, with the so-called digital culture. It is at this point where a second argumentation of the communicative field emerges, which is a signaling to form ecosystems thought and linked to the modes and practices that happen in the real world of young people.

The examples cited above confer an important potential to the use of digital technologies. Although it should be clarified that they do not do so from a position of inclusion (programs of this type have been carried out in classrooms for decades), but in the search for environments that enable and facilitate a type of ecology to promote and support educational practices. Now, thinking about educational spaces articulated with digital culture, above all, implies a concurrence of the notions of appropriation and interaction. As defined by Crovi (2017), in digital culture new modes of socialization, identities, behaviors and coexistence emerge that are sustained in the appropriation of digital resources, as well as in the deployment of interactions in continuous transfers from social networks to the everyday world and vice versa. This is why studies on educational spaces speak of an evolution that takes advantage of the potential of cyberculture in dynamics orchestrated towards appropriation, interaction and dialogue.

Deuze (2006) has expressed that digital culture can be seen as an emerging set of values, practices and expectations regarding the way people interact (or should interact) within today's society. As such, a digital culture cannot exist without society having proceeded to its conformation and functioning. For this reason, in educational spaces, elements consistent with digital culture are emphasized, since they have a character: a) mediated by instruments and signs, which are culturally defined; b) social, due to the relationships that are linked to the historical context, and c) communicative, due to the participation of subjects in collectivities through social interaction (physically and virtually). Somehow, in the design observed in the proposals for new educational spaces, connecting links are woven between school culture and out-of-school culture to confer modes of interaction capable of activating relational processes among subjects. Although at the beginning of the text it was mentioned that classrooms would seem to be historically immutable structures, let us remember that the school space "is a specific spatial context, in permanent movement and configuration, in relation to that context, its history and the subjects that inhabit it" (CASTRO, 2015, p. 211).

Therefore, revisiting the classroom to transform it is a broad task that, among other things, must consider a flexible organization; of methods capable of executing active and participatory pedagogical practices, and where the environment allows symmetrical, dialogic communication processes with varying degrees and types of interaction. It is therefore a reconceptualization to manage an educational and communicative space that allows extending interaction, facilitating modes of communication and collaboration, formulating new roles, influencing pedagogical and didactic methods, in short, proposing a new learning space. Gamboa comments that "if there is a place within the school that should be distinguished for offering flexibility in terms of the arrangement and arrangement of the furniture it contains, of the tools it offers, and even of the space to which one has access, it is the classroom" (GAMBOA, 2017, p. 167).

With all of the above, it has been intended to emphasize that the theme of educational spaces from the perspective of communication is not only an aesthetic revisionism of the classroom or the inclusion of digital technologies. The elements that are present in the empirical projects mentioned above contain unavoidable communicative aspects, so that, with the contributions of authors and concepts mentioned in this area of study, it is feasible to expand and enrich the theoretical and practical framework of this phenomenon. Many of the principles that are sought with the transformation of the classroom have to do with the ability to move the student away from a passive and receptive posture; to provide a space for participatory and collaborative flows; to take significant advantage of technological media and digital environments; to establish relationships of interaction and collective learning; to encourage critical and reflective thinking, in short, to provide a liberating educational space, emphasizing that all of the above are axioms of educational communication. Kaplún asserted: "Tell me what communication you practice and I will tell you what education you advocate" (KAPLÚN, 1998, p. 220), to which we could suggest and add: tell me what educational spaces you design and I will tell you what communication and education you promote.

FINAL CONSIDERATIONS

There is a perceived deficit in the field of communication (especially educational communication) within the studies, research and empirical projects of educational spaces. This is in spite of the fact that there are sufficient arguments to warn that notions linked to this field underlie the design of such spaces. For example, in the projects of spaces described above, there is talk of establishing a more horizontal organization; encouraging collaborative and social learning; promoting the use of active methodologies and diversifying interactions (group, with digital technologies, in networks, etc.). In view of this, it is feasible to point out that such premises correspond to the lines of study of educational communication.

It can be stated that an educational space is, above all, a communicative space whose cognitive, social and cultural demands require a revision of the prevailing communicative model, which in many cases is anchored to models of the past century, with pedagogies based on transmission, memorization and passive reception. Consequently, it is prudent to say that such educational and communicative practices do not meet all the expectations and challenges that the school is called upon to face in the 21st century.

Educational spaces are exploring ways to adapt to the current context and connect with the forms that unfold in the digital culture. This is the basis for considering that the configuration of school spaces is seeking to transcend the instrumental part of technology inclusion or the individual-machine interaction towards environments that are an important part of the processes of social appropriation of technologies, and to assign new meanings to the processes of interaction and knowledge generation in students.

Recovering the notions of communication in general, as well as educational communication in particular, for the study of educational spaces is a principle of theoretical congruence that can help against the inevitable attacks that the educational sector constantly suffers from commercial, technocentric and instrumental visions. Therefore, it is substantial to add communicative approaches to broaden the debate when discussing and futurizing the classroom and all its possible innovations. In this way, we will have more theoretical anchors (together with the existing ones) to locate the true essence of educational action.

REFERENCES

APARICI, R.; SILVA, M. Pedagogía de la interactividad. **Comunicar**, v. 19, n. 38, p. 51-58, 2012.

BOSCH, R. Desarrollo de espacios innovadores para el aprendizaje. **3er. Congreso Internacional de Innovación Educativa del Tecnológico de Monterrey**. 2016. Disponible en: <<https://www.youtube.com/watch?v=0ukpr9m3Itk>>. Consultado el: 10 abr. 2020.

BROOKS, C. Space matters: The impact of formal learning environments on student learning. **British Journal of Educational Technology**, v. 42, n. 5, p. 719-726, 2011.

BROWN, M. Learning spaces. En OBLINGER, D.; OBLINGER, J. (Eds.). **Educating the Net Generation**. Boulder, Co.: Educause, 2005, p. 174-194.

CASTRO, A. **Espacio escolar y sujetos. Políticas y experiencias**. Un estudio en casos de la ciudad de Córdoba. Argentina: Universidad Nacional de Córdoba. Tesis de Doctorado, 2015.

CORREA, J. M.; DE PABLOS, J. Nuevas tecnologías e innovación educativa. **Revista de Psicodidáctica**, v. 14, n. 1, p. 133-145, 2009.

COTNER, S.; LOPER, J.; WALKER, J. D.; BROOKS, D. It's Not You, It's the Room — Are the High-Tech, Active Learning Classrooms Worth It? **Journal of College Science Teaching**, v. 42, n. 6, p. 82-88, 2013.

CROVI, D. Prácticas de apropiación e interacción en la cultura digital. En CABELLO, R.; LÓPEZ, A. (Eds.). **Contribuciones al estudio de procesos de apropiación de tecnologías**. Buenos Aires: Ediciones del Gato Gris, 2017. p. 25-38.

DEUZE, M.. Participation, Remediation, Bricolage: Considering Principal Components of a Digital Culture. **The Information Society**, v. 22, n. 2, p. 63-75, 2006.

DOORLEY, S.; WITTHOFT, S. **Make space. How to set the stage for creative collaboration**. EUA: Wiley, 2012.

DORI, Y. J.; BELCHER, J.; BESSETTE, M.; DANZIGER, M.; MCKINNEY, A.; HULT, E. Technology for active learning. **Materials Today**, v. 6, n. 12, p. 44-49, 2003.

DUSSEL, I. Aprender y enseñar en la cultura digital. **Documento del VII Foro Latinoamericano de Educación**. Buenos Aires: Santillana, 2010.

EUROPEAN SCHOOLNET. **Future Classroom Lab Learning Zones**. 2013. Disponible en: <http://icl.edufor.pt/documentos/FCL_LearningZones-Description_ING.pdf>. Consultado el: 10 abr. 2020.

EUROPEAN SCHOOLNET. **Learning Zones Document**. 2016. Disponible en: <<https://fcl.eun.org/documents/10180/13526/FCL+learning+zones+Dec+2016/a091a761-7a63-443e-afe0-d1870e430686>>. Consultado el: 10 abr. 2020.

GAMBOA, F. Reflexiones sobre el futuro del aula universitaria: rediseño del espacio educativo, impacto de las tecnologías emergentes y las estrategias educativas previsibles. En RAMA, C.; CHAN, M. E. (Coords.). **Futuros de los sistemas y ambientes educativos mediados por las TIC**. México: Universidad de Guadalajara, 2017. p. 165- 180.

GAMBOA, F. Diseño de espacios colaborativos interactivos para el aprendizaje. En ZUBIETA, J.; RAMA, C. (Coords.). **La Educación a Distancia en México. Una nueva realidad universitaria**. México: UNAM, 2015. p. 201-211.

HERNÁNDEZ GUTIÉRREZ, D. Nuevos entornos de aprendizaje en la cultura digital. En GARAY, L. M.; ORTIZ, H. G. (Coords.). **Comunicación, cultura y educación. Nueve aproximaciones al estudio de las tecnologías digitales**. México: Universidad Autónoma Metropolitana-Unidad Lerma, 2015. p. 211-232.

JOINT INFORMATION SYSTEMS COMMITTEE (JISC). **Designing Spaces for Effective Learning: A Guide to 21st Century Learning Space Design**. England: University of Bristol; JISC Development Group. 2006.

KAPLÚN, M. **Una pedagogía de la comunicación**. Madrid: Ediciones de la Torre, 1998.

KARIIPPANON, K. E.; CLIFF, D. P.; LANCASTER, S. J.; OKELY, A. D.; PARRISH, A. M. Flexible learning spaces facilitate interaction, collaboration and behavioural engagement in secondary school. **PloS One**, v. 14, n. 10, 2019.

OBLINGER, D. G. (Ed.). **Learning spaces**. Louisville, Co.: Educause. 2006.

PAPERT, S. **The children's machine: rethinking school in the age of the computer**. New York: BasicBooks. 1993.

PARDO, H. **Opportunity Valley. Lecciones <aún> no aprendidas de treinta años de contracultura digital**. Barcelona: Outliers School, 2014.

RADCLIFFE, D. A Pedagogy-Space-Technology (PST) framework for designing and evaluating learning places. En RADCLIFFE, D.; WILSON, H.; POWELL D.; TIBBETTS, B. (Eds.). **Learning spaces in higher education: positive outcomes by design**. The University of Queensland, 2009. p. 9-16.

RSHAID, G. **Learning for the future. Rethinking Schools for the 21st Century**. Colorado: Lead + Learn Press. 2011.

SCOLARI, C. **Convergencia, medios y educación**. Buenos Aires: RELPE, AECID. 2011.

SILVA, M. **Educación interactiva. Enseñanza y aprendizaje presencial y on-line**. Barcelona: Gedisa, 2008.

TENA, R.; CARRERA, N. La *Future Classroom Lab* como marco de desarrollo del aprendizaje por competencias y el trabajo por proyectos. **Revista Mexicana de Investigación Educativa**, v. 25, n. 85, p. 449-468, 2020.

VAN HORNE, S.; MURNIATI, C. T. Faculty Adoption of Active Learning Classrooms. **Journal of Computing in Higher Education**. v. 28, n. 1, p. 72-93, 2016.

VAN HORNE, S.; MURNIATI, C. T.; SAICHAIE, K.; JESSE, M.; FLORMAN, J.; INGRAM, B. Using Qualitative Research to Assess Teaching and Learning in Technology-Infused TILE Classrooms. **New Directions for Teaching and Learning: Active Learning Spaces**, n. 137, p. 17-26, 2014.

WALLIS, C.; STEPTOE, S. How to bring our schools out of the 20th century. **Time**, v. 168, n. 25, p. 50-56, 2006.

WHITESIDE, A. Conclusion: Advancing Active Learning Spaces. **New Directions for Teaching and Learning: Active Learning Spaces**, n. 137, p. 95-98, 2014.

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