Emerging Pedagogies developed for higher education from the covid-19 curfew

Pedagogías emergentes desarrolladas en educación superior a partir del confinamiento por la covid-19

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Liliana Lira López*
Alejandro Uribe López**

Keywords
Emerging pedagogy;
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ABSTRACT

Presenting the results had the goal was to identify the knowledge obtained by the experience of teachers during the confinement for the pandemic, in the months of January to June 2020. The methodological approach was a mixture of two stages: The first one was quantitative, in which a survey was carried out on a suitable non-random sample on six universities with in the country. The second one was qualitative, in which semi-structured interviews were carried out on teachers that have experience on both regular learning and distance learning modes caused by the lockdown. The results, from a systemic perspective on the emergent situation, allowed us to recognize the institutions and teachers as knowledge managers. We can observe how the actors managed to bring balance to their institutional structures, as well as to the teaching and learning processes. Notwithstanding the fact that this research was carried out on private universities and that only the learning experience acquired by the transitioning to distant learning was retrieved, the findings contribute pedagogical field create in the crisis, regarding the efficient learning-oriented measurements and organizational structure.

Palabras clave
Pedagogía emergente;
educación superior;
educación en línea

RESUMEN

La investigación tuvo el objetivo de identificar los aprendizajes por experiencia desarrollados en docentes y estudiantes durante el confinamiento por la pandemia, en los meses de enero a junio de 2020. El diseño metodológico fue mixto, distribuido en dos etapas: una cuantitativa, en la que se aplicó una encuesta a una muestra no aleatoria por conveniencia en seis universidades del país, y una cualitativa, en la que se aplicaron entrevistas semiestructuradas a profesores que tuvieran experiencia en las modalidades presencial y virtual (esta última provocada por el confinamiento). A partir de la perspectiva sistémica sobre lo emergente, los resultados permitieron comprender a las instituciones y a los docentes como gestores del conocimiento. Se muestra cómo los actores lograron un equilibrio en sus estructuras organizacionales y en el proceso de enseñanza-aprendizaje. Si bien el estudio se realizó en universidades del sistema de educación privada y se limitó a recuperar la experiencia del aprendizaje producida por la transición de lo presencial a lo virtual, los hallazgos aportan al campo pedagógico generado durante esta crisis, respecto a las mediaciones en línea y las estructuras organizacionales eficientes, centradas en el aprendizaje.

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*PhD. in Education from Universidad la Salle. Academic coordinator of the Doctorate in Education and responsible for the Research area at Universidad Marista de Guadalajara. ORCID: https://orcid.org/0000-0002-1816-3401
**Master in Learning Technologies from the University of Guadalajara; PhD student in Higher Education Management at the University of Guadalajara. ORCID: https://orcid.org/0000-0003-3047-3792

INTRODUCTION

The urgency of the educational system to respond to the health contingency due to Covid-19 found in virtual teaching the possibility of maintaining the link between the institution and the parents, as well as between teachers and students. This transition forced almost unthinkingly to transfer the physical synchronous space to the virtual, without implying the understanding of the pedagogical distinction regarding which contents to prioritize, how and for what; however, despite this situation, new learning was developed.

Although the pandemic affected the entire population (regardless of nationality, educational level, income or gender), the consequences experienced were diverse, impacting vulnerable groups the most. The crisis brought to light the multiple deficiencies and inequality among education systems, while educational measures adopted to address the transition from face-to-face to virtual schools focused on the implementation of online learning tools in most member countries of the Organisation for Economic Co-operation and Development (OECD).

Online platforms were mostly used during school closures to deliver virtual classes with teachers in real time, in conjunction with other online learning tools. In basic education, there was a tendency to broadcast educational content on television to continue student learning (Schleicher & Reimers, 2020). In Mexico, the telephone service *Tu maestro en línea* was activated, which offered personalized counseling to students (Schleicher, 2020). Regarding teacher training, most of the courses were conducted online and dealt with the use of information and communication technologies (ICT) to enhance learning.

Conversely, the Economic Commission for Latin America (ECLAC, 2020) mentioned that most member countries (29 out of 33) established forms of continuity for studies in various distance modalities. The use of virtual platforms for asynchronous learning was highlighted in 18 countries, while 23 countries broadcast educational programs through radio and television. As a result, teachers had to plan and adapt their educational processes and adjust their daily practice to virtual methodologies.

At the high-level ministerial meeting held in March 2021, the United Nations Educational, Scientific and Cultural Organization (Unesco) highlighted - one year after the pandemic caused by Covid-19 - that nearly half of the world's students were still being harmed by school closures (partial or total), and predicted that more than 100 million children will be below the minimum level of reading proficiency as a result of this crisis. According to data from the Unesco Institute of Statistics on the monitoring of school closures by Covid-19, 37 589 611 students in Mexico have been affected: 4 942 523 in preschool, 14 182 288 in primary, 14 034 522 in secondary and 4 430 248 in tertiary or higher education. Therefore, the

Global Coalition for Education, which has 160 members, identified three priority areas of work: gender, connectivity and teachers (Unesco, 2020).

In this sense, digitization is positioned as a basic resource necessary for education to be a common good. At the national level, in this period of crisis, multiple forums, seminars, webinars and various online meetings have emerged to reflect on the experiences of changing from face-to-face to virtuality. This transition cannot be recognized as "online learning", since the design of this type of experience requires specific and in-depth planning of the learning process. Means, Bakia and Murphy (2014) mention that there are nine dimensions for the construction of these experiences, such as mode, pace, student-instructor ratio, pedagogy, instructor and student roles, synchronization of online communication, the role of online evaluations and the source of feedback, which makes the design of courses complex for teachers who have not worked with these models.

The university educational model was transferred to the pedagogical proposal of emergency remote teaching (Hodges *et al*., 2014), which aimed to transfer face-to-face courses to virtual work experiences during emergency time, allowing the educational proposal to adapt to the contextual problems caused by Covid-19. This concern motivated the emergence of studies dedicated to systematizing the experience of teachers and students during the transition stage or the incorporation of technology into educational practice. Although online education already existed, the reality shows that it was not part of the patterns of action, nor of the uses and customs of face-to-face educational practice.

The *Grupo de Investigación sobre la Educación Superior en Coyuntura* (GIESuC), led by Juan Carlos Silas and Sylvia Vázquez (2020), conducted a study on this forced transition in Mexico. The authors analyzed the conditions to face this mode in students and teachers of private higher education institutions. Likewise, in the book *Educación y Pandemia. Una visión académica* (IISUE, 2020), coordinated by Hugo Casanova, presents a compilation of 35 contributions by academics from the *Instituto de Investigaciones sobre la Universidad y la Educación* (IISUE-UNAM), who investigated the impact on education during confinement. Since these conditions are a recent phenomenon, their analysis was elaborated at a reflective level on the period of forced transition to virtuality.

In this context, where virtual education replaces face-to-face education, a process of installation and learning takes place. Despite the tension posed by the pandemic (Silas and Vázquez, 2020), and the academic reflections compiled by Casanova, teachers have been trained by experience, discriminating and generating degrees of hybridization. The teaching staff used multiple technological tools, with which the educational practice was transformed with respect to what was usually done. In this sense, online education ceased to be thought of with prejudices or stigmas of low levels

of effectiveness, to differentiate the objectives and scope of the different technological tools and applications on digital platforms. A fundamental concept to explain this transition is “the emergent”, which refers to the self-organization of complex systems capable of spontaneously ordering themselves and achieving a functional adaptability to operate continuously with the cultural mediations developed and incorporated in the subjects. The theories that support this assertion are: systemic, through Maturana's concepts of autopoiesis, Luhmann's functional adaptability and Vigotsky's sociocultural constructivism mediation.

From the systemic perspective, “emergence” is a property of complex systems that occurs during chaotic processes and behaviors that cannot be completely predicted or understood, as they exert nonlinear and diffuse functions. It is generated as a capacity of the system to spontaneously order itself and achieve functional adaptability. In this sense, emergent pedagogical actions arise from the limits of the possibilities within the educational system for it to function properly. The concept of autopoiesis, proposed by Maturana and Varela (1995), is used to refer to the self-maintenance of the system, while for Luhmann (1996) it represents the possibility of functional operation of the system.

The imbalance with respect to what was considered usual in the educational system puts the paradigm and the existing system under tension. Faced with this situation, the role of the teacher and the school organization changed: the teacher no longer represents the center of teaching and the school is the only space for generating learning. Seen in this way, “emergent pedagogy acted in the face of the unforeseen; by disrupting and changing the direction of work in the locally situated classroom” (Gallagher and Wessels, 2011, p. 239, cited in Salazar and Torres, 2014).

Previously, the different ways of carrying out teaching-learning processes in the classroom were identified as educational innovation practices, which differs from the emerging pedagogies analyzed in this study due to their systemic approach, the product of an autopoietic process that, in short, refers to system learning (the management carried out in the school organization and the mediations carried out by teachers) to continue its operations.

Emerging pedagogies make it possible to understand the changes in management and teaching practice in terms of taking advantage of the educational possibilities of the resources available in their context, which mediate the relationship between the teacher and the students. This explains a variation in the role of these actors and in the use of the tools provided by their system or cultural environment.

The emergent pedagogical actions allow the generation of learning that coexist in parallel to the prescriptive educational practices, which not only

comply with what is requested by the institutional organization, but also achieve a mode of organization of impact due to the experience obtained in response to the need in the new production of learning. According to Salazar and Torres (2014), this refers to teaching-learning practices, which are produced in the face of epistemological and axiological changes in the ways of generating knowledge, skills and values.

The author Elias Norbert (2008) analyzes how transformations occur in human customs and argues that there is a correspondence of their change in the structure of relationships between people (from their psychic structure). Language is an example of these cultural mediations (numerical, musical, writing and, in addition, ICT), and is used through practices organized in a sociocultural way. Thus, mediations are present in the psychic or cognitive structure of educators and are framed in those means, instruments, strategies, actions, relationships or tools that they intentionally use to construct learning.

For this reason, this research, Emerging pedagogies developed in higher education from the confinement by Covid-19, was based on the assumption that in the mandatory transition from face-to-face to virtuality, teachers learned and were formed by experience, which, once systematically recovered, can contribute to understand it as an emerging pedagogy, providing didactic guidelines and new ways of working to take advantage of the means used in the framework of a new teaching culture. In this sense, the guiding question of the study was: from the educational and organizational practices, what do teachers and students refer to as elements that intervened in the achievement of learning during the pandemic caused by covid-19? The objective was to understand the elements that make up an emerging pedagogy based on the learning developed by the mediations and the institutional management implemented.

METHODOLOGY

The study conducted was a mixed one, and both quantitative and qualitative data were obtained (Creswell and Plano, 2017). The strategy used was of a sequential type in two stages, the first was quantitative and consisted of a survey that aimed to perform a diagnosis on the most used media and the assessment of their relevance. For this purpose, a questionnaire designed in digital format was used through the Google Forms tool, which was applied to teachers and students of the Marist university system in Mexico. The participating universities were: Mexico City, San Luis Potosí, Querétaro, Valladolid (in Morelia) and Guadalajara. A total of 812 responses were obtained (377 teachers and 435 students): 337 from the Marist University of Querétaro, 107 from the Marist University of San Luis Potosí, 100 from the Marist University of Mexico City, 110 from the Marist University of Guadalajara and 158 from the

Marist University of Valladolid in Morelia. The selection of the sample was non-random, by convenience and totally voluntary.

The second stage was qualitative, in which semi-structured interviews were applied in focus groups composed of professors who had experience in the face-to-face and virtual mode (caused by confinement); in addition, interviews were applied in the management area. The objective was to recover the teaching experience on learning and managers in the changes of their function. The questions were motivated by the information obtained in the quantitative stage, and it was a complementary process: the first phase helped in the description of the general conditions on the means used and the second phase deepened in significant data, identified as topics in the quantitative part. The narrative of the interviews was systematized in a qualitative-inductive manner.

RESULTS

Mediation for learning

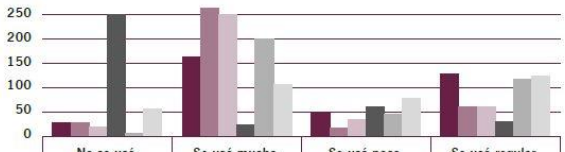
The concept of mediation is crucial in sociocultural theory, whose premise for achieving learning is based on interaction. According to Vigotsky (cited in Hernández, 1998), mediation is an epistemological problem that is solved with a dialectical interactionist approach, composed of the subject, the object of knowledge and the instruments or cultural artifacts. Likewise, it is identified as a dialectical-contextual approach, whereby cultural mediation impacts on psychic functions and consciousness. As already mentioned, an example of these mediations is language.

From this perspective, mediations for learning are understood as those means, instruments, strategies, actions and technological tools used intentionally to construct learning. Frequently, this assumption is questioned in distance education because of its unidimensional and vertical character of Web 2.0 tools (Ramírez and Chávez, 2012). However, the present study sustains the interactionist approach, since interaction is encouraged in collaborative platforms both from the teacher with students and among student peers.

Quantitative data

A total of 377 responses were obtained from teachers, which show a general use of technological media, the level of contribution and the valuation of the impact on learning. Graph 1 shows that the most used ICTs by teachers were asynchronous learning platforms (such as Moodle or Classroom), with a total of 260 responses (68.96%); followed by videoconferencing (Zoom, Google Meet, Skype and Microsoft Teams), with a total of 248 responses (65.78%), which means that there was an almost balanced combination between asynchronous and synchronous. In

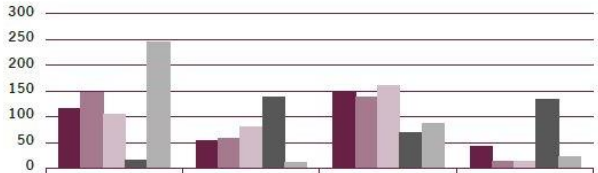
contrast, a similar percentage reported that social networks such as Facebook, Twitter and Instagram were used to a lesser extent for educational purposes (253 responses, 67.10%).



	No se usó	Se usó mucho	Se usó poco	Se usó regular
Mensajes de texto: WhatsApp, Messenger u otro	31	164	53	129
Plataformas educativas: Moodle, Classroom, Teams u otra	30	260	23	64
Videoconferencias: Zoom, Skype, Meet, Teams	29	248	35	65
Red social: Facebook, Twitter, Instagram u otro	253	28	66	30
Correo electrónico	12	200	48	117
Videos: YouTube, Vimeo u otro	62	106	82	127

Graph 1. Frequency of use of technological media for educational purposes by teachers.

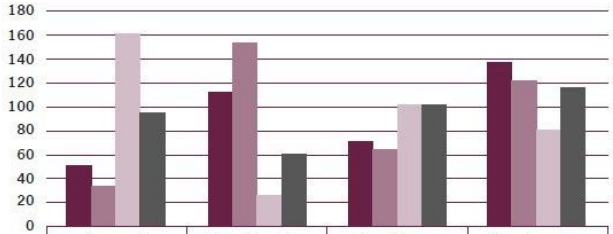
Graph 2 shows the level of impact that, in the opinion of the teachers, the medium in which the students learned had. Videoconferencing obtained the highest percentage (247 responses, 65.51%). In turn, 150 (39.78%) thought that the impact of the activities in discussion forums, wikis and other platform tools was regular, compared to 119 (31.56%) who considered it high. Consultation or guidance among students had a regular impact for 162 (42.97%). Meanwhile, 144 (38.19%) found little impact on interaction with family members, while 138 (36.60%) reported no impact at all.



	El impacto fue mucho	El impacto fue poco	El impacto fue regular	No hubo impacto
Actividades en foros de discusión, wiki, *maps* u otra, diseñadas en alguna de las plataformas digitales en las que interactuamos de manera conjunta	119	60	150	48
Comunicación a través de correo electrónico, redes sociales, WhatsApp, llamadas telefónicas con alumnos	149	65	143	20
Consulta u orientación entre los estudiantes	108	88	162	19
Consulta con sus familiares	18	144	77	138
Videoconferencias	247	17	91	22

Graph 2. Level of impact of the medium through which students learned the most, as judged by teachers.

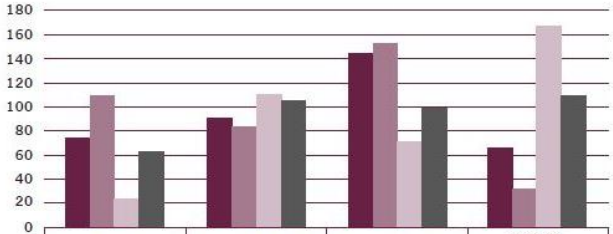
Graph 3 shows the sources of information used for educational purposes by teachers: documents and books at home, with a total of 154 (40.84%); libraries and virtual databases, with 115 respondents using them a lot (30.50%) and 142 regularly (37.66%); while 165 (44.56%) reported not having used the materials provided by the school and 115 (30.50%) indicated that they used tutorials on a regular basis.



	No se usó	Se usó mucho	Se usó poco	Se usó regular
Bibliotecas y bases de datos virtuales como EBSCO o Google	48	115	72	142
Documentos y libros existentes en mi casa	34	154	66	123
Documentos que proporcionó la escuela	165	25	104	83
Tutoriales	96	62	104	115

Graph 3. Frequency of teachers' use of information sources for educational purposes.

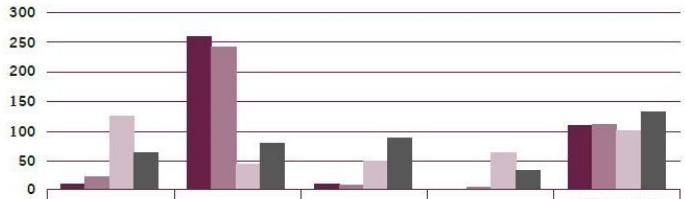
Graph 4 shows the level of contribution of the information sources used in teaching practice. It is identified that 110 teachers (29.17%) refer that the documents and books existing at home contributed decisively, while 152 (40.31%) consider that their contribution is significant. Regarding libraries and virtual databases, 143 (37.93%) expressed that they contributed significantly. For 167 (44.29%) the documents provided by the school did not have a relevant contribution, the same opinion shared by 110 (29.17%) regarding the tutorials.



	Contribuyó de manera decisiva	Contribuyó de manera parcial	La contribución fue significativa	No hubo contribución relevante
Bibliotecas y bases de datos virtuales como EBSCO o Google	77	91	143	66
Documentos y libros existentes en mi casa	110	83	152	32
Documentos que proporcionó la escuela	22	114	74	167
Tutoriales	65	103	99	110

Graph 4. Level of contribution of the information sources used.

Graph 5 shows the frequency of activities carried out by teachers to conduct their classes and facilitate the teaching process. It was found that 257 teachers (70.82%) refer that they always searched for additional information on their own to complement their class, while 107 (28.38%) did it regularly. In addition, 239 (63.39%) mention that they designed new dynamics for their distance classes constantly, and 110 (29.17%) on a regular basis. Only 130 (34.48%) stick to what the school provided on a regular basis, and 122 (32.36%) seek to communicate with subject matter experts to a lesser extent, which reflects autonomy to solve situations related to their teaching role, as well as the willingness to design different or new pedagogical dynamics.



	Lo hice poco	Lo hice siempre	No aplica	No lo hice	Regularmente lo hacía
Busqué por mi cuenta información adicional para la clase	8	257	5	0	107
Rediseñé nuevas dinámicas a distancia	21	239	4	3	110
Me comuniqué con expertos en el tema	122	46	48	62	99
Me apegué a lo que me proporcionó mi escuela	55	76	87	29	130

Graph 5. Frequency of activities carried out by teachers to facilitate learning.

In the open-ended questions of the survey, teachers indicated the main factors for which they consider that technological tools were significant for learning (see Table 1). They also expressed some personal and professional strengths that they detected while performing their practice and that allowed them to solve problems (see Table 2).

Table 1. Factors that determine the significant level of technological tools

The interaction with students and the possibilities of making the class dynamic	The condition of the subjects: previous knowledge and variety of the technological tools used
Communication, direct contact and its similarity with face-to-face interactions	Knowledge of the tools or platforms, which maximizes their use
Virtual sessions allow you to perform dynamics and recover them	The variety of tools on the platforms used
Advise and answer questions directly	Online mode is not suitable for all students

Table 2. Identification of strengths and elements to solve problems

Identification of personal and professional strengths	Elements that intervened to solve problems
Experience and knowledge of the subject	Ability to manage emotions
Previous knowledge of ICT	Positive coping attitudes
Ability to adapt to change	Discipline and comply properly
Capacity for virtual pedagogical interaction	Support from family and work networks
Self learning	Have the necessary technological means
Positive coping attitudes	Adaptability

Qualitative data

In this section we report the categories constructed in the narrative of the group interview applied to the teachers with the objective of recovering their experience on some fields or topics detected in the quantitative data, as well as to deepen qualitatively on them. The regularities found were:

Development of strategies, dynamics and new actions:

- Combination of various communication devices and platform tools that facilitate the monitoring of participation.
- Different dynamics: feedback is personalized, group monitoring is mostly focused on the mood, emotions and perceptions of the class; it is a dynamic of sharing and knowing how to be present. The teacher must have a positive attitude and be willing to listen.
- Dynamics with different intentions and moments: individualized attention to teamwork, students' interest in asynchronous activities (and that these are meaningful), as well as actions focused on the objective.

Other ways of communicating online education:

- More individual feedback and personal attention.
- Written communication is privileged: in the platform chat and in devices for immediate communication.

- Group communication makes it difficult to go deeper into the contributions of classmates. In large groups, the communication of subjectivities is not perceived differently, confidence in the autonomy of the student increases and is interpreted from the nature of participation (frequency, tone of voice and type of work delivered).

Most significant tools for learning

- Asynchronous: those that facilitate interaction or the exchange of ideas with activities mediated by the teacher.

- Synchronous: the dynamics, the teacher's attitude, the interaction with various senses to motivate or interest the student, so that they are attentive and verify what they have learned. The online mode is not for everyone

- Not everyone accepts paradigm shifts, there is resistance, and an attitude towards change is required.

- The economic difference, access to connectivity, the student's context.

- Students learn in different ways, depending on the subject and the object of learning: those of practice and those of human interaction (face-to-face or body-to-body).

New learning for teachers

- Control stress and be less controlling.

- Accept that it is a new model, it is not face-to-face or only online. Use more technological tools of interest.

- The relevance of feedback.

- Accepting other forms of communication: interpreting tones of voice, seeing each other on camera, rules of mutual trust and interest in the tasks given.

- Recognition of students' capabilities, including commitment and responsibility for their own learning, dialogic, active and collaborative; they should also seek to be self-learners.

Figure 1 shows the above elements on a map of categories referring to learning constructed from the significant experience of teachers. This configures the guidelines for action in the mediations that would make up the emerging pedagogy.

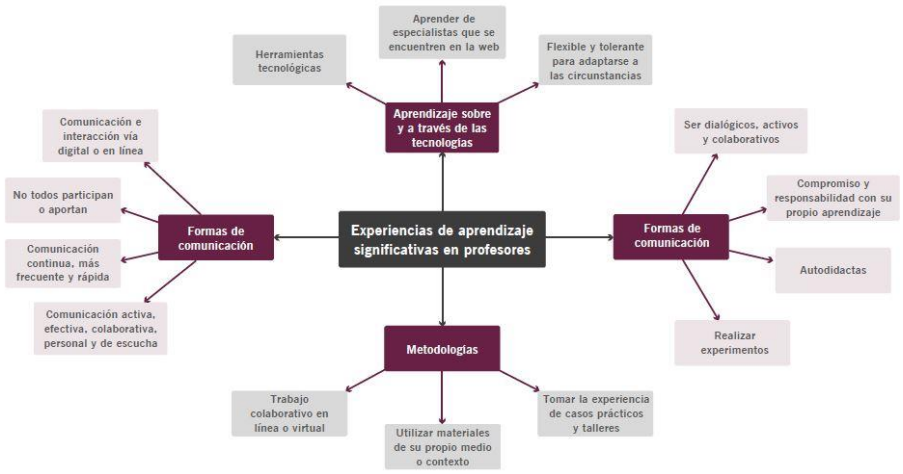


Figure 1. Learning experiences valued by teachers as significant.

Institutional Management

Institutional management for learning refers to the reorganization process carried out by an institution to facilitate and generate educational experiences in accordance with the circumstances experienced by the pandemic generated by covid-19. For this reason, the flow of decisions, information and work processes through its organizational structure was measured in order to recognize its responses to this changing environment and to fulfill its learning mission. The training processes that were facilitated were identified, in addition to the courses and diplomas that teachers received to teach online classes. Similarly, the management response to the contingency to facilitate teaching and learning was analyzed, in which the responsible areas were involved (how they participated and which communication channels were used to provide institutional indications). This made it possible to recognize the possibilities of the teacher and students to attend to the institutional indications in the face of the health contingency, as well as the role of the managers in relation to the perspective they transmitted, their evolution and the learning of distance management.

Quantitative data

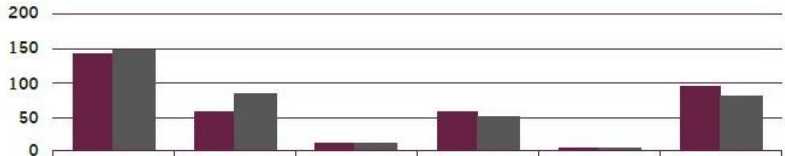
Previous institutional experience was relevant in responding to the health emergency. According to the scale, 69.49% of the teachers mentioned that their institution had the necessary knowledge and the indispensable technology to move to the distance education mode and implement this learning model. For their part, the students agreed with this perception: 51% expressed that they agreed or strongly agreed that their institution had the pedagogical skills and technological resources to work at a

distance; however, it is representative that 29% did not express a clear opinion in this regard (see Graph 6).

	De acuerdo	Desacuerdo	Muy de acuerdo	Muy en desacuerdo	Ni de acuerdo ni en desacuerdo
Docentes	149	34	113	12	69
Estudiantes	156	61	78	27	136

Graph 6. Previous experience of the institution to respond to confinement due to health emergency.

With regards to pre-pandemic training, 54% of the teachers consider that the Marist institutions trained them adequately for this situation; 16% say that they have not received training from their university; and 23% say that the training was regular. This shows that, in general terms, the teachers consider that the training prior to the pandemic was appropriate. On the other hand, with respect to how the institution's offerings were during the pandemic (in the months of February to May 2020), the teachers rate them as good and excellent (60%). In this sense, the Marist universities responded quickly to the need to prepare their teachers for this educational model, so the trainings were well accepted by the faculty (see Graph 7).

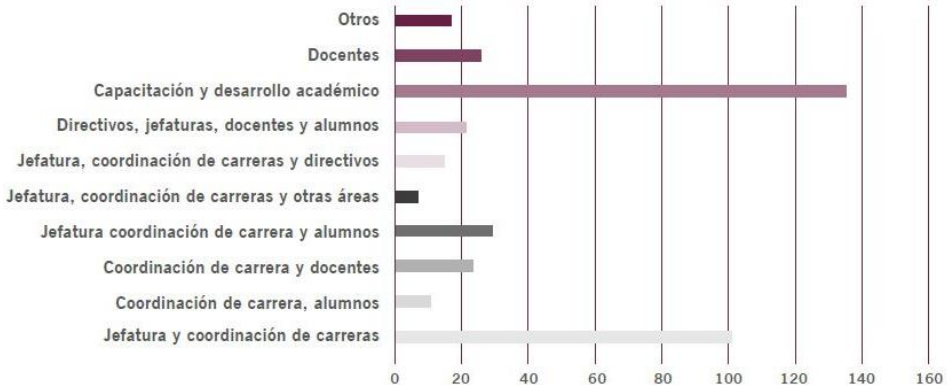


	Buena	Excelente	Mala	No ofertó	Pésima	Regular
Previa a la emergencia sanitaria	143	63	16	61	4	90
Durante la emergencia sanitaria	147	80	16	55	3	76

Graph 7. Training received by teachers

It is noteworthy to know the opinion of the teachers about the organization of the Marist universities to carry out distance work. The results show that the area of training or academic development had a significant incidence in distance work (34%); on the other hand, the coordination divisions, the academies and the headquarters participated preponderantly (26%). The academic coordination divisions were at the nerve center of the organization of work, since they had a relationship with teachers, students,

directors and other areas of the institution (such as academic development and information technology) (see Graph 8).



Graph 8. Incidences of the areas in the teachers for the development of distance work.

The above showed the capacity of Marist universities to adapt to online education by promoting adequate training means, the indispensable resources to implement it, and the appropriate means of communication for its organization. This was contrasted with the interview conducted with one of the managers of the Marist universities, as well as with some of the open-ended questions in the questionnaire.

Qualitative data

According to the testimonies obtained in the interviews, there were some actions of the organization process identified in the management structure:

- The change for online education started in a disorganized way, but later responded in a structured way.
- New technologies and infrastructure were contracted to respond to virtual learning. While online graduate programs were in place, these technologies were not applied at the undergraduate level.
- Communication was vertical; however, after the academic coordinators spoke directly with the students through videoconferencing, a more horizontal scheme was encouraged.

Based on the interviews in the management area, the experience was contrasted with the open-ended questions of the questionnaire and the quantitative results in order to analyze how the training, the strategic proposal, the structural configuration and the organizational environment

were modified. Figure 2 shows some of the elements that characterized the management of the universities studied.

Figure 2. Elements of institutional management during the pandemic

DISCUSSION

In view of the quantitative results on mediations for meaningful learning by frequency, 68.96% of the teachers used platforms for asynchronous learning, while 65.78% used videoconferences, which confirms the applicability and relevance for learning from the interactionist perspective. This is confirmed by the level of impact on student learning, since 65.61% of the teachers refer that it was because of videoconferences, 42.97% because of the interaction among students and 31.56% because of the tools of the platforms in which they interact together.

Regarding the materials used by teachers for educational purposes, these refer that they mostly used the documents and books they had at home (40.84%), followed by libraries and virtual databases (30.50%), proportional to the contribution these had in teaching practice; on the other hand, 44.56% expressed not having used the materials provided by the school and 44.29% that their contribution was not relevant. The above has a high relationship, since 70.82% reported having looked for additional information for their class on their own, while 63.39% designed new dynamics for their class, and only 34.48% stuck to what the school provided.

This information reflects a high degree of teacher autonomy to resolve situations in their virtual practice, as well as a willingness to design new dynamics in their classes. The above is deepened in the qualitative part, since teachers identify the objectives of the platforms and the different tools, using them in a complementary and relevant way according to the

objective, as well as the forms of online communication, highlighting the relevance of written and subjective feedback (such as the interpretation of voice tones, the rules of mutual trust and the recognition of students' interests by some clues). With this, the learning of some of the attributes of online communication is evidenced.

These actions would be some of the guidelines of the emerging pedagogy, since they arise from changes in the teaching practice regarding the use of educational possibilities and available resources that were provided in their context, which mediate the relationship between the teacher and the students. This implied a variation in their role with respect to face-to-face education and their training process.

From the field of sociogenetics, Norbert Elias (2008) explains how transformations occur in human customs, and argues that there is a correspondence of the change of customs in the structure of human relationships from the psychic structure. In this sense, the perspective of teachers, students and institutional managers reveal the psychic structure as a product of the experience of carrying out the educational process in a different way than usual, a period in which languages, concepts and procedures were sedimented, together with some new actions used as mediation. Although from the systemic perspective the emergent refers to the system's capacity for equilibrium (autopoietic capacity), in order to make them operative and functional it is necessary to carry out further studies to deepen and differentiate between the capacities that teachers have to carry out the teaching processes, which together deepen the potentiality that can be given to the resources and processes to build mediations of emergent pedagogy in the field of virtual education.

Regarding institutional management, the training implemented in the universities was oriented to the use of new technologies; however, the specialization of teachers in the educational processes characteristic of distance education is necessary. On the other hand, the situational strategic management proposal (Uribe, Arredondo and López, 2019) allowed the universities studied to respond in a comprehensive manner, contemplating training, technology and the necessary means of communication to teach the subjects during the pandemic by organizing class times.

Likewise, universities generated economic support mechanisms to guarantee the principles of democratization and access, and a predominantly horizontal communication was identified, especially between professors and students. The above confirms that the structural configuration of the universities studied changed from a machine-like bureaucracy to a professional one, where the communication and decision-making processes are closer, which poses a more adequate response to contingencies (Mintzberg, 1991). This can be demonstrated by the role that the academic departments had in the communication, organization and training processes during the pandemic, since they

allowed a timely response to continue with the classes and generated a more “compact” structure so that the process could be centered on the teacher-student relationship.

Finally, the results show that the organizational environment underwent significant changes. It was noticeable how the institutional value of “presence” was demonstrated by the accompaniment that teachers had with their students. In addition, the professors showed a commitment to their training, in the search for new technological tools and ways of teaching. This indicates that the universities adapted to the changes and the teachers responded optimally. The balance between the new allowed the reorganization for the educational service to continue with its operations, while the management structures of the universities resulted in the creation of a scheme based on training, self-management, situational strategic thinking, an operational structural reconfiguration and a different organizational environment.

CONCLUSIONS

Teachers developed technological skills for online education by identifying the objectives of the platforms and their use in a supplementary manner to generate learning according to the level of impact. Their language in the narrative expresses a distinction: technology is not education and does not replace a teaching-learning process, which implied the incorporation in their psychic or cognitive structure and that it was part of their repertoire or pedagogical mediations.

Online education contains the necessary communication attributes to be considered in its pedagogy, it requires a differentiated dynamic by teachers, in which there is a solid communicative interaction (objective and subjective), and forms of written feedback to the work, as well as focusing on the purposes of the tools linked to those of the subjects or specific learning.

The teachers learned how to implement the dynamics of distance pedagogy, the actions that stand out are those of greater communication - privileging written communication and that which can be similar to face-to-face teaching -, which explains why the most used means was videoconferencing and collaborative platforms to increase interaction.

The new teaching actions learned and strategies implemented were the combination of communication tools and devices to make themselves present, personalized feedback, monitoring students' moods and emotions, developing subjectivity communication by interpreting voice tones, establishing rules of mutual trust and identifying interests in the completion of tasks. It was recognized that online education is not for everyone, due to

the economic conditions and connectivity possibilities of the students; from the pedagogical aspect it is identified that students learn in different ways and according to the learning objectives. However, this process becomes difficult when the corporeality is compromised.

The analysis of institutional management made it possible to identify that emerging pedagogies also require an evolution in the organizational structure of universities in order for them to respond to new realities and changing contexts. In this regard, a pertinent strategy would be the generation of academic councils where teachers, students and academic leaders participate in the constant monitoring of the teaching-learning processes, as well as the constant implementation of new technologies to propose training processes, infrastructure application and ensure that the organization continues to focus on learning.

Finally, the findings show that an area of opportunity is to deepen the virtual teaching practice to carry out the teaching processes and give potentiality to the resources and processes to build mediations in the field of virtual education, with special attention to the various interactions and what they produce.

REFERENCES

CEPAL-Unesco. (2020). La educación en tiempo de pandemia. Informe COVID-19. Cepal. https://repositorio.cepal.org/bitstream/handle/11362/45904/S2000510_es.pdf?sequence=1&isAllowed=y

Creswell, J. W. & Plano Clark, V. L. (2017). *Designing and conducting mixed methods research*. LA: Sage.

Hernández, G. (1998). *Paradigmas en psicología de la educación*. México: Paidós.

Hodges, C.; Moore, S.; Lockee, B.; Trust, T. & Bond, A. (2020). The Difference Between Emergency Remote Teaching and Online Learning. EDUCAUSE. http://hdl.handle.net/10919/104648

IISUE. (2020). *Educación y pandemia. Una visión académica*. México: UNAM. https://www.iisue.unam.mx/nosotros/covid/educacion-y-pandemia

Luhmann, N. (1996). *Introducción a la teoría de sistemas*. México: Universidad Iberoamericana.

Norbert, E. (2008). *El proceso de la civilización. Investigaciones sociogenéticas y psicogenéticas*. México: Fondo de Cultura Económica.

Maturana, H. y Varela, F. (1995). *De máquinas y seres vivos*. Santiago, Chile: Editorial Universitaria.

Means, B.; Bakia, M. & Murphy, R. (2014). *Learning Online: What Research Tells Us about Whether, When and How*. New York: Routledge.

Mintzberg, H. (1991). *Diseño de organizaciones eficientes*. Canadá: McGill University.

Organización de las Naciones Unidas para la Educación, la Ciencia y la Cultura (Unesco). (2020). Educación: de la interrupción a la recuperación. https://en.unesco.org/covid19/educationresponse

Ramírez, D. y Chávez, L. (2012). El concepto de mediación en la comunidad del conocimiento. *Sinéctica*, (39), pp. 1-16. http://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S1665-109X2012000200004&lng=es&tlng=es

Salazar, D. y Torres, J. (2014). *Pedagogías emergentes y aprendizaje emergente. Nuevos retos para las universidades del siglo XXI* (conferencia). Simposio Internacional Educación, Formación Docente y Práctica Pedagógica en Contexto. Colombia. https://www.researchgate.net/publication/282863033_Pedagogias_emergentes_y_aprendizaje_emergente_nuevos_retos_para_las_universidades_del_Siglo_XXI

Schleicher, Andreas. (2020). *The impact of COVID-19 on education – insights from education at a glance 2020*. OECD. https://www.oecd.org/education/the-impact-of-covid-19-on-education-insightseducation-at-a-glance-2020.pdf

Silas, J. y Vázquez, S. (2000). El docente universitario frente a las tensiones que le plantea la pandemia. *Revista Latinoamericana de Estudios Educativos, L*(número especial), pp. 89-120. https://doi.org/10.48102/rlee.2020.50.ESPECIAL.97

Uribe López, A.; Arredondo Cortés, S. & López Mayoral, M. (2019). Diagnóstico de Gestión Institucional: Un Estudio de Caso en Educación Básica. *Revista de la Facultad de Contaduría y Ciencias Administrativas, 4*(7), pp. 9-22. https://rfcca.umich.mx/index.php/rfcca/article/view/106

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