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The role of the faculty in the new learning spaces, interaction and construction of knowledge considering the COVID-19 pandemic

Rol del profesorado en los nuevos espacios de aprendizaje, interacción y construcción del conocimiento ante la pandemia COVID-19

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Abstract

The present work constitutes a theoretical approach to the role that, in the face of current needs, immediately forced the professors to move from a face-to-face modality to a virtual modality; starting from the research question What are the theoretical considerations that support a pertinent role of professors in the face of the COVID-19 pandemic? In order to respond, it is proposed the objective of proposing a faculty role that responds to the new learning spaces, interaction and construction of knowledge generated by the current situation. Within the methodology used, it is used a documentary review that transits between Brunner's pedagogical theory by pointing out the importance of scaffolding in professor mediation as a fundamental part to support the student in the construction of knowledge when guided by his interlocutor ; Vygotsky's sociocultural theory that recognizes the benefit of collaborative work supporting others, for joint interactions that enrich both individual and collective learning; Freinet's pedagogical theory that provides the basis for a living school, where the student is the center of teaching in the face of the solution of problems and realities of the environment, which together with the basic notions of connectivism integrate a co-constructor faculty role of the knowledge in collaboration with their students. The faculty role, in everyday situations cannot be a spontaneous conception or the result of an improvised activity, therefore, its foundation and consideration must be present in the face of the diverse realities that arise.

Learning, Construction of knowledge, Faculty role

Resumen

El presente trabajo, constituye un acercamiento teórico al rol que, ante las necesidades actuales, obligó de forma inmediata transitar a los docentes de una modalidad presencial a una modalidad virtual; se parte de la pregunta de investigación ¿Cuáles son las consideraciones teóricas que fundamentan un rol pertinente del profesorado ante la pandemia COVID-19? Para dar respuesta se plantea el objetivo de proponer un rol del profesorado que atienda los nuevos espacios de aprendizaje, interacción y construcción del conocimiento generados por la situación actual. Dentro de la metodología empleada, se hace uso de una revisión documental que transita entre la teoría pedagógica de Brunner al señalar la importancia de los andamiajes en la mediación docente como parte fundamental para apoyar al educando en la construcción de conocimiento al ser guiado por su interlocutor; la teoría sociocultural de Vygotsky que reconoce el beneficio de trabajar colaborativamente apoyando a otros, para de forma conjunta se den interacciones que enriquecen los aprendizajes tanto individuales como colectivos; la teoría pedagógica de Freinet que aporta las bases para una escuela viva, donde el alumno es el centro de la enseñanza ante la solución de problemas y realidades del entorno, que en conjunto con las nociones básicas del conectivismo integran un rol docente co-constructor del conocimiento en colaboración con sus alumnos. El rol docente, ante situaciones cotidianas no puede ser una concepción espontánea ni resultado de una actividad improvisada, por lo que su fundamentación y consideración debe estar presente ante las realidades diversas que se presenten.

Aprendizaje, Construcción del conocimiento, Rol del profesorado

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Introduction

The objective of this article is to identify some theoretical elements that support the role of teachers in the face of the COVID-19 pandemic, which contributes to the students moving initially towards learning and later reaching a construction of knowledge. Thus, it is necessary to mention that in history education has gone through different stages, where it has sought to prepare man to be and be in society, a task that has a high degree of complexity and that for its analysis we are going to place ourselves in what dictates the report of the United Nations Educational, Scientific and Cultural Organization for the Education of the XXI Century, where it argues that the challenge of the classroom and of the teachers is to achieve "… learning to know, learning to do, learning to live together and learning to be "(Delors, 1994, p. 91); This has various implications that oblige the teacher to facilitate and mediate learning from these four pillars, placing emphasis not only on the cognitive, but also on skills and abilities, social coexistence and ethics. All this leads to propose a teaching-learning process [E-A] aimed at teaching how to learn to learn. (Moreno, 2012)

But how to get students to learn to learn? It is also necessary for students to take a step forward in the search for solutions to environmental problems that support the construction of knowledge. This is where the obligation to think about education and the goals that are pursued in it resides; but better still, consider the role that the teacher should play with this scenario and direct actions to ensure that the student reaches educational achievement, which has emerging scenarios such as the one posed in the COVID-19 pandemic caused by the SARS-CoV virus. 2, where a challenge is not easy at all, since learning spaces and new forms of interaction have been modified, even when technology was already present in EE processes, with different conceptions and uses by teachers and teachers. which invites us to rethink the role that teachers must play in the face of these various modalities that will undoubtedly continue to be present.

Background

The COVID-19 pandemic, came to disrupt various areas of daily life, including education, turning towards a distance educational practice, where teachers did and reproduced what research prior to the pandemic showed at the time that there is limited use of technology by teachers (Martínez, 2018) and the use is based on the conception and belief of teachers (Arancibia, Cabero and Marín, 2020), this implies that the use of Information and Communication [ICT] is made from a belief and visualization of the teachers that they have of it, rather than with a pedagogical foundation that accompanies the students at first to learning and later to the construction of knowledge.

The spaces for interaction and learning have changed over time, what was initially known as a privilege to access education, turned to a social need that had various purposes, from preparing to be good citizens as in Rome, or to prepare labor in the industrial era (Moreno, 2012); What if, there is a huge abyss in the way in which learning is generated today since what served as selective individual learning, national education systems have seen the need for more people to access it, so that the bases and mechanisms for mass education were established, but it is time to think that individual learning is no longer our own, since the same society requires people prepared to act for the benefit of the community and with it, seek that it occurs that knowledge where each one contributes what corresponds to them from their training and knowledge and faces the great challenges that today permeate society.

A clear example of making individual contributions and participating in the construction of knowledge that addressed an emerging problem in an immediate time, was the vaccine against the pandemic virus, where various professionals used their knowledge to identify the necessary reagents to deal with the need of humanity; Well, this example serves as a basis, to enhance efforts to generate individual learning in various disciplines that students have to contribute when they are in collaboration with others and that together they have to provide solutions, as a way of life and exercising.

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The hand is learning to learn, but also, working with others in the design of archetypes, whether they are physical, such as the vaccine, or conceptual constructions that will lead them to generate knowledge and not be left alone in the consumption of it.

That is why the urgent need for dialogical participation among the members of society to reach a consensus on where we are going as a social group, and it is that, currently in an environment represented by the globalization of internal markets, by the intensive use of information and by the establishment of novel connectivity systems, our world has become highly complex, characterized by the rapid and continuous change of technology, systems, processes and even products. In it, organizations must act beyond traditional management systems, which are still valid but insufficient and therefore inefficient, and must seek sustainable factors over time that allow them to provide competitive advantages.

Thus, the work of the teacher becomes relevant as a social agent in the EE process, he has a great responsibility, but above all the task of asking questions about what he does and what the educational systems dictate, so that, with a high critical sense and responsible, know the role that corresponds to you in the face of the huge wave of emerging technology that facilitates interaction and that, therefore, must be analyzed.

The theory has focused on the analysis of individual learning processes and some theories have emerged that try to demonstrate how to learn with others, but again we are facing a challenge of paradigm shift that forces us to think about what in the classroom or classroom. virtual is done.

Theoretical discussion

It is interesting to recognize that learning spaces diversified during the pandemic, learning at home, virtual classrooms and distance education; With this, the role played by the teacher also has significant changes in the face of these new scenarios in two aspects, on the one hand, having to support their students to build knowledge and in the same way, document the actions they carry out through the systematization of experiences and contribute to the theoretical field the results of the analysis of their practice, taking care that the learning and knowledge that is developed is not only momentary, but that skills and abilities that last for life are generated, with "… learning to know, learn to want and feel, learn to do, learn to live together, learn to be, learn about knowing, wanting, feeling ". (Delors, cited in García, 2009)

In this task of learning for life, educational institutions have put into practice various strategies that allow students to remain in the educational process regardless of the space and modality that each of the schools has adopted; But, it is the teacher who is in the first line and who mobilizes the resources, competences and concepts of the educational task to achieve it. The commitment is arduous, since it is necessary to provide students with resources and opportunities so that they can, in addition to learning, have formal access to education at a distance, through a series of actions that integrate didactic situations that support learning to learn.

Therefore, in addition to the knowledge that students have to develop in the disciplinary part, there are the skills to continue learning, coexistence, cognitive and affective development and endow them with autonomy to continue learning throughout life and contribute to their learning in the construction of collective knowledge.

Hence, to achieve this, the teacher must have a clear intention in each of their actions that leads students in this transition from learning to a construction of knowledge that becomes difficult when the educational process is transferred to distance and mediates. with ICT; in the words of Fullat "... you learn by solving real problems of everyday life in order to move forward in it". (2000, p. 275)

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Therefore, teachers must have disciplinary, pedagogical and technological knowledge, without eagerness to be mentioned in order of importance, it becomes relevant that technological knowledge must have an educational theoretical support and that the teacher remains in a conscious position of each of the activities that it develops, emphasizing the role that it has to develop to achieve learning and construction of knowledge in students.

The subject not only acts and learns alone, and with the issue of social isolation generated by the pandemic, it forces them not to work in education with an individual learning posture; Even in the business sphere, he acted immediately and the cubicles were moved to the homes, but always working in collaboration with others; Thus, in the educational process, sociocognitive conflicts must be generated through situations that represent challenges to groups, that use ICTs and that shorten these social, but also cognitive, distances.

The theory of sociocognitive conflict, integrates the critical derivation of Piaget and the perspective of the socio-constructivist approach of Vygotsky, a theory that supports the current challenge of providing an intellectual development, which is implicit in the equilibrium theory and that will pass from an internal conflict of the subject, made a cooperative exchange, which contributes to the modification of schemes through active negotiation with others, to reach a consensus that solves a problem of interest. (Rosselli, 2011)

Then, the teacher when posing problematic situations or challenges that integrate the urgent need to deconstruct and build conceptual schemes or physical archetypes in a collegial way through the various technological tools available to him, can develop a way for the student to learn to seek solutions in a distributed cognition that is based on the critical stance of cognitive psychology and that encourages them to make use of the tools and ideas of others that are manifested in the environment and thus contribute to social construction. (Rosselli, 2011)

Thus, the existing educational theory contributes to the search for the foundation of the role that it must have in the face of virtual modalities with schemes and platforms already designed, but also in the face of emergent situations that revolutionize their work and force them to unlearn their usual way of educating and bringing people closer together. students to knowledge; For which, we delve into answering the question: What are the theoretical considerations that support a relevant role of teachers in the face of the COVID-19 pandemic?

Method

To answer the question, an exploratory research is carried out, by making a theoretical compilation (Behar, 2008) in the absence of an established teaching role that addresses adverse situations that force the teacher to modify their practice and incorporate a form of ICT-mediated work. Likewise, documentary-type research is recognized under the qualitative approach by reviewing theories in a flexible way, based on an interpretive perspective (Hernández, Fernández & Baptista, 2017) that allows integrating a teaching role that supports individual learning and learning. later construction of the knowledge of the learners.

To achieve this, an analysis of interpretation is made in educational theories that provide elements for the design of a teaching role in situations that require the use of technology for educational purposes, or that it be used permanently in virtual learning modalities, to provide input into an intentional ICT practice.

In the search for information, the categories of analysis were raised, from the contributions of epistemological theories of how knowledge is built; psychopedagogical by how students learn, technological theories that support the incorporation of ICT in education; and finally, emphasizing in the sociological theories that base the interaction of the students in virtual modalities; with this, there are specific specifications to generate an ideal teaching role based on the integration of theory.

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Results

Once the search for the theories and postulates that integrate a proposal of a relevant role for teachers has been carried out, it is necessary to group them as previously indicated, foreseeing that each of them provides elements of theoretical support to the actions and a way to integrate all the educational work that emerges from this in conjunction with study plans and programs administered and brought to life by the teaching staff; Given this, the following results are obtained.

Within epistemological theories, critical rationalism becomes relevant as a way of accessing and validating knowledge, where error is considered as a way to generate individual and collective learning, since Popper proposes that there are three types of reality or world, the objective made up of material objects, that of subjective mental experiences and the product of intellectual and cultural activity; Therefore, learning situations must be generated where the student goes through these stages and comes to build knowledge, since:

> ... not only does rationalism shine a light on problem solving in scientific research approaches, in science teaching and in the development of higher thinking skills, but it also raises valuable, suggestive and illuminating criticisms of the theory of repetition learning and its supposedly inductive nature, the echoes of which unfortunately continue to resound in classrooms today. (cited in Giraldo and García, 2018, p. 92)

So, we must change the paradigm of a school of learning by repetition or exposure in virtual classes accompanied by only visual material such as a power point presentation where the teacher supports himself so that in an expository way he tries to make the students learn by memorization.

Students are required to be in situations that provide a problem, a project or the construction of conceptual constructs, and being aware of the errors they have within their learning when testing their answers, project or construction, makes them internalize in a critical way their choice and have the opportunity to foresee in analogous situations the possible responses from a critical perspective.

This takes the first step, by generating situations where students exercise that critical thinking of their actions and an environment should govern that allows the student to have these spaces for reflection, either in physical or virtual spaces.

In the choice of the theories that govern the psychopedagogical section, Brunner's theory of learning by discovery stands out, where the student has the opportunity to interact with the object of study and with the support of the group, the concept of scaffolding has a great implication when conceived As a didactic approach to develop student self-regulation, both individually and collectively by the teacher and the classmates themselves, it requires its own design that supports virtual settings, where a reading, scheme, glossary, become a scaffolding or bridge to move towards the Zone of Proximate Development [ZPD], a term coined by Vygotsky and that similarly establishes collective learning in relation to others, with conceptual, metacognitive, procedural or strategic scaffolding. (López and Martínez, 2010)

Therefore, work in virtuality is made up of different edges to be taken into account, since it is not an isolated work or only individual since in each of the tools that are integrated they must contribute to considering the socialization of ideas , opinions and constructs; An example could be working in the cloud with an application such as drive, where students in synchronous or asynchronous time build written contributions and each one integrates their knowledge; Here, Vigostsky's sociocultural theory becomes relevant, since sharing and transmitting the experience of each of the students requires that it be through an intentional mediation process, where the other is supported to achieve their ZPD, the support being the teacher or the same classmates, with the use of language and with a technological setting, will be a system of oral or written signs. (Carrera and Mazzarella, 2001)

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It is a great challenge to exploit the potential of technological tools and virtual platforms and for everyone to be involved in individual and group learning, but as social beings, the integration of groups must cement the work that is done in each of the groups and that the teacher is that agent who integrates the opportunities for interaction, to share reciprocally and that there is a design, which is the subject of another moment, that provides those opportunities; but since it is a feature of the necessary knowledge of the teaching staff, it requires professionalization in the field of ICT.

In the same vein of ideas, this virtual integration is based on connectivism, which is considered "… the integration of principles explored by the theories of chaos, networks, complexity and self-organization. Learning is a process that occurs within diffuse environments of changing core elements - which are not completely under the individual's control "(Siemens, 2004, p.5). Although this cannot be considered a theory, it can be named as a pedagogical foundation proposal according to the incorporation of technology into E-A processes; but also that, through ICT, other spaces for interaction and learning are generated, so that students are constantly in learning opportunities when browsing the web, having a scope of connection of information is criticized that it is even in disjunction with constructivism or instructional design, but by leaving open the possibility of accessing information and it can be ordered, it accentuates the attention that should be given to it by incorporating part of its proposal that together with the technological scaffolding, the The student himself can be aware and position himself in his learning and document his progress in this learning to learn; and that in the end, he can collaborate with his colleagues in the construction of useful knowledge for society.

Thus, the living school of Freinet, moves to a space of virtual interaction, with problems to be solved, but that these are real, that they have a connection with their environment, that this active role that is offered, is to build a space that has life and meaning for students (Chourio and Segundo, 2008), detaching the teacher from a role that administers content, but rather that students live those contents and that allow them to develop skills and attitudes towards these problems from an ethical and constructive.

With the aforementioned theories and proposal, the following scheme is established, integrating that both students and teachers, in emerging modalities such as that posed by the COVID-19 pandemic, can contribute to the individual and collective learning of the group and at the same time, take another step in the construction of knowledge.

Teacher role

The teacher has moved from roles that range from a transmitter of knowledge, to the current teacher who requires having skills in various areas, such as pedagogical, technological and disciplinary, but being aware of current needs, he must have a role of co-builder of knowledge with his students, since he has to make available to his students the resources and materials to achieve it, articulated in situations that generate individual learning, but that support the construction of knowledge for himself, to the others and for society in general, so under that order of ideas the following conditions are established that the teacher must have at present:

The teacher, by knowing and internalizing these theoretical aspects, cannot get out of phase with learning and only place himself in teaching, but is one more learner, both disciplinary and technological, where students perhaps know a little more than he does in ICT matters , and that they should be open to being a guide, mediator, but also a learner and adopt a co-constructor role, taking, if not by the hand, if in view of the path that has to be followed to develop skills of search and analysis of information, to arrive at the construction of knowledge; with which the following table is established.

Co-constructor teaching role			
Focus Epistemological	Focus Psychopedagogical	Focus Sociological	Focus Tenological
Popper	Bruner and Freinet	Vygotsky	Siemens
Critical rationalism	Scaffolding and living school	Sociocultural	Connectivism

Table 1 Co-constructor teaching role
Source: Own elaboration

Thus, teachers must generate rich learning spaces, since it is their responsibility to delineate the beginning, dynamics, and constructive continuity of knowledge, having the conditions to generate a cognitive construction in students.

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The purpose is that teachers are capable of assuming current challenges that respond to society's problems, but above all that with a high ethical sense they possess fundamental tools such as sensitivity and flexibility to delegate an active role to their students and also, who possesses knowledge to know how to guide them, therefore Abarca (2015) establishes four conditions that teachers must acquire and / or develop in order to:

1. Perceive the problems that derive from the social, economic and cultural transformations we are witnessing.

2. Be attentive to the experiences of the students.

3. Share your joy for the new knowledge, your concerns about the difficulties of understanding and facing their vital processes, which affect relationships with the school, with classmates, with the teacher and with knowledge.

4. To be receptive also to innovative proposals and to the possibilities that open up in the context of the pedagogical relationship, which is, something very different from the mechanical and uncritical adoption of the new.

Therefore, the task is not easy, since it adds the conditions to generate knowledge in its students and respond to the needs of society; Each learning situation must be carefully designed and modeled in order to have the expected effect and to achieve the stated objectives.

To the aforementioned, it is possible to integrate the technological skills necessary to incorporate ICT into their practice and enable students to learn in various settings, this in order to reach the metacognition of the students and establish by themselves the relationships that there is between what they learn and find it useful and important in their future professional endeavors.

Each theory indicated, contributes elements that are translated into actions that the teaching staff must carry out and that imply:

a) Integrate the methodology of problem-based learning and project-based learning.

b) Consider the flipped classroom to enrich virtual synchronous times.

c) Being a learner together with the students, so that they are participants in the construction of knowledge.

d) Establish networks among the students themselves, regardless of the grade or semester being studied.

Conclusions

Generating learning in students is the first step that leads to a higher step that is to generate the construction of knowledge in a relevant and collective way, so the challenges faced by the teacher require that there be a paradigm shift in the conception of their own epistemic constructions and not only classroom learning situations are developed, but ICTs are included and problems that require the use of the various competencies inserted in the pillars and ends of education are developed, since as it advances and changes society requires other responses, and if you keep doing the same thing with the same teaching practices, you will always have the same results.

The teacher as a social agent in constant change and adaptation, requires to be clear about the role that he plays and the proposal of a co-constructor role of the knowledge that accompanies, mediates, provides and establishes problematic, complex and real learning situations that with their verisimilitude to professional practice, they will allow the student to ask their own questions and needs to advance in their real perception of the world of work, not being adrift of beliefs and limited use of ICT, but with a purpose and a specific teaching proposal and guided by the construction of knowledge.

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