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Comparative Study Between Mexico and Colombia of Teaching Practices in Rural Contexts in Times of the COVID-19 Pandemic

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Summary

Latin American rural education has been characterized by a series of inequities; It was no exception during the period of the covid-19 pandemic. For this reason, the objective of this work is to describe the practices of Mexican and Colombian rural teachers and to investigate the main challenges and successes of teaching strategies. The study is of a qualitative descriptive nature, based on interviews with 10 basic level rural teachers from Colombia and Mexico. The interview script was validated by expert judgment using the content validity ratio. While the choice of the sample was for convenience. Content analysis was used to interpret the data using the MAXQDA 2022 *software*. The results show inequity in access to technologies, Internet services, as well as an increase in the educational gap. Didactic strategies were characterized by printed guides and asynchronous monitoring through platforms such as WhatsApp. One of the methodological successes was the personalized advice *in situ*. Teachers express the development of digital skills, communication and design of strategies for remote work in rural schools.

Keywords: inequality, distance education, rural education, multigrade school, educational practices, educational technology.

Abstract

Latin American rural education has been characterized by a series of inequities; it was not the exception during the period of the COVID-19 pandemic. Therefore, the objective of this work is to describe the practices of Mexican and Colombian rural teachers and investigate the main challenges and successes of teaching strategies. The study is descriptive and qualitative in nature, based on interviews with 10 rural K-12 teachers from Colombia and Mexico. The interview script was validated by expert judgment using the content validity ratio. While the choice of the sample was for convenience. Content analysis was used to interpret the data using the MAXQDA 2022 software. The results show an inequality in access to technologies, internet services, as well as an increase in educational lag. The teaching strategies were characterized by printed guides and asynchronous monitoring through platforms such as WhatsApp. One of the methodological successes was the personalized advice on site. Teachers express the development of digital skills, communication, and design of strategies for remote work in rural schools.

Keywords: inequality, distance education, educational practices, rural education, educational technology, multigrade school.

abstract

Latin American rural education has been characterized by a series of inequalities; It was not an exception during the period of the covid-19 pandemic. Therefore, the objective of this work is to discover the practices of two rural Mexican and Colombian teachers and to investigate the main challenges and successes of teaching strategies. The study is of a qualitative descriptive nature, based on interviews with 10 rural teachers of basic level from Colombia and Mexico. The interview route was validated by the judging of specialists using the content validation ratio. As for the choice of the sample, it was for convenience. The content analysis was used to interpret the data using the MAXQDA 2022 software. The results show inequality in access to technologies, Internet services, as well as an increase in the educational gap. The didactic strategies are characterized by printed guides and asynchronous support through platforms such as WhatsApp. One of two methodological successes was personalized advice on site. The teachers express the development of digital skills, communication and the development of strategies for remote work in the field schools.

Key-words: inequality, distance education, field education, multiserial school, educational practices, educational technology.

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Introduction

During the 2019 coronavirus disease (covid-19) pandemic, the context of rural education at the primary level was characterized in both Mexico and Colombia by inequality in terms of technological equipment, connectivity, teacher training, access to materials, educational platforms and, finally, the accompaniment of children in the family environment. This coupled with a great disparity in strategies between private, public, urban and rural-multigrade education systems. According to Ducoing (2020), there are several of the challenges that are experienced in these difficult circumstances, among which stand out the little technological infrastructure that makes it impossible to access an online education and the fact that, even if you have access to the television education strategies, students do not usually have study habits and family schedules.

In addition to the above, teacher training is limited, work experience mediated by technologies, as is the case with videoconferences, and the design of distance strategies is scarce. So many were forced to develop digital skills to cope with education during this period.

In the case of Mexico, the Ministry of Public Education (SEP) promoted the *Aprende en Casa* strategy, through which the federal government introduced educational content in two media: online and on television (in various channels). In addition to these actions, the fundamental learning lists for the 2020-2021 and 2021-2022 cycles were established to prioritize the contents of the basic education programs. However, these actions did not guarantee that students would achieve the learning expected in the study plans.

In the case of Colombia, the School Meals Plan (PAE) continued, and the Aprendizaje Digital portal was launched, which makes resources available to all to support learning processes, and, under strategies 1, 2, and 3 Edu-Action, educational television programs of more than 12 hours a day, mainly Teacher in your home. To this was added the Digital Library, applications such as B the 1 Challenge, and the Contact Master project for the continuous training of teachers and managers (Angulo, October 23, 2020).

However, these government proposals were not enough to guarantee the continuity of education, since these policies, for the most part, depended and continue to depend on technological equipment in the family environment, not to mention that not all parents or caregivers of children have the skills and the time to mediate their learning. The studies by Mérida and Acuña (2020), Ducoing (2020) and Cervantes and Gutiérrez (2020) show that public policies were not designed for the diverse realities of students, especially in high-poverty regions, which is why it increased the educational gap during the pandemic.

Literature review

Preliminary studies on education in times of pandemic show different working conditions for teachers, in addition to the limitations on resources and tools both in homes and schools, such as the Internet and technological devices for the development of educational activities. (Portillo, Reynoso and Castellanos, 2020).

Faced with these adjustments and total and partial closures of educational institutions, education in rural environments faces multiple challenges, mainly educational inequality in terms of technological equipment, connectivity and attention from parents to guide the

learning processes of their children (Rundel and Salemink, 2021). . According to Litheko (2012), most parents in rural areas show disinterest in their children's school work. There are various reasons such as: work in the fields, agricultural day laborers and work on livestock farms, even childcare is delegated to grandparents or other relatives so that parents go to work.

Another important aspect to highlight is the digital divide between rural and urban students to access technology and the development of information and communication technology (ICT) skills. Urban schools, in some cases, have more technological equipment and connectivity, while in rural areas it is common to find problems with electrical infrastructure and Internet connection, which erects a barrier to access and integration of technologies in the school. (Wang, 2013; Looker and Thiessen, 2003).

Another of the threats of multigrade rural education is the closure of schools due to the small number of students; for the administrative authorities, it is not justified to keep a teacher in front of the group if there are few students (Smit & Humpert, 2012; Wirth, Elis, Müller & Yamamoto, 2016). Also, a disadvantage is poor school performance. Montenegro, Raya and Navaridas (2020) mention that before the pandemic this was already a problem and that during this period it became more serious. From the teaching perspective of rural schools, a high percentage of students did not achieve the minimum expected learning during the period of confinement. This, in some cases, happens as a result of the digital divide that some communities are experiencing at the beginning of the pandemic, the continuity of education was largely impossible due to the absence of communication through technological means (Alban et al., 2021); coupled with the low socio-educational context, which influenced the low achievement of learning objectives.

Studies regarding the practices and impacts that the pandemic has had in primary schools are few compared to those undertaken at the baccalaureate and higher levels (Nikolopoulou, 2022). Among the results of these studies, equity in access to technology and connectivity, synchronous-asynchronous learning strategies, socio-emotional effects on students, and academic impacts stand out (Timmons, Cooper, Bozek, & Braund, 2021; Hu, Chiu, Leung , & Yelland, 2021).

On the other hand, through the review of the literature on pedagogical practices, these are considered as a set of situations that permeate the work of teachers inside and outside the classroom. Therefore, they have an objective and social character, understanding and

intervening in the perceptions of the people who make up the educational act. As established by Ríos (2018):

The pedagogical practice is inscribed in the pedagogical knowledge as a practice of knowing (involving the institutions, the subjects and the discourses of pedagogy), allowing to assume this practice as the set of everyday or elaborated knowledge, concepts, methods, prescriptions and observations. coming from the interiority of knowledge itself, as well as from decisions external to it, all of them accessible to historical description (p. 36).

Based on the above, pedagogical practice is a reflective and dynamic exercise among students, teachers and the community in general. It should be noted that it is not only presented during class, but also in other spaces that permeate the educational context. Pedagogical practice is the interaction of the human being with the world and this never occurs in isolation, but rather in interaction with other subjects (Arreola, Palmares and Ávila, 2018).

According to Becerra and Cristancho (2018), pedagogical practices are not a direct application of pedagogical theories, rather it is a complex and uncertain scenario where dialectical interactions occur that the teacher must analyze and question to convert learning spaces. Therefore, pedagogical practices are understood as a network of relationships from different spheres such as personal, institutional, interpersonal, social and didactic (Contreras and Sepúlveda, 2003).

However, the Ministry of National Education of Colombia establishes that pedagogical practice is a learning scenario in which self-reflection is constantly invited, promoting competencies for the life of students. Pedagogical practices must be spaces for scientific, epistemological development linked to training in ethical and moral values for the comprehensive development of students (Castillo and García, 2019). The teacher is called to transform the classroom by seeking appropriation by the students, having the necessary resources, focusing on the disciplinary, pedagogical and academic aspects, thus awakening their interests and needs to learn by responding to what, why and how to teach

Once the educational practice and its dimensions have been conceptualized, it is important to point out that the inclusion of ICTs has accelerated at all educational levels. And for this reason it is considered appropriate to mention some studies that have been carried out in this regard, such as that of Fuhr, Iturralde, Boucíguez and Rocha (2014), who propose the

analysis of distance educational practices from a model that contemplates the pedagogical dimension for characterize teaching practice.

A didactic model is made up of epistemological, sociological, psychological and didactic components. The first corresponds to the conception of knowledge and science in education, while the sociological one answers the question of why teach. The third corresponds to guiding teachers regarding the level of development, cognitive and learning styles of students. Finally, the didactic dimension is directly oriented to the teaching-learning process, since it guides the teacher regarding the design of strategies and activities that students must develop to achieve a certain learning.

Research questions

This paper aims to recognize and characterize pedagogical practices in emergency education in rural contexts, as well as to recognize the challenges faced by teachers in the face of emergency remote teaching. Therefore, it seeks to answer the following research questions:

- 1) What characterized rural-pedagogical practices during emergency teaching?
- 2) What learning have teachers built during this period?
- 3) What challenges are rural teachers facing during the pandemic?
- 4) What are the positive and negative experiences of an emergency remote teaching in a rural environment between Mexico and Colombia?

Methodology

Design

This research is qualitative, analytical-descriptive, essentially exploratory, with a phenomenological approach to rural educational practices during the covid-19 pandemic. The qualitative paradigm seeks to approximate a reality without generalizing the results, for which its priority is the description and understanding of social phenomena, while others seek to transform reality. It does so from the perspective of the participants, in their natural environment, and in relation to the context, this helps to deepen their points of view, interpretations, and meanings (Hernández and Mendoza, 2018). While the qualitative phenomenological approach seeks to base the study of lived experiences regarding an event from the perspective of the subjects. This approach is considered adequate, since, far from

quantifying, it seeks to explore the complex reality of educational practices from the experience of teachers during the pandemic. In short, it is about recovering the experience and concrete practices of teachers in a rural context that, on many occasions, demonstrate the inequality experienced by different regions of the world with a peculiarity.

Instrument design

For the present study, a semi-structured interview was designed from the categories proposed by Fuhr et al. (2014) for the analysis of teaching practice in an educational context with a distance modality mediated by ICT, for which the following categories were considered a priori: Strategies, Teacher's role, Class organization, Interactions, Tools and resources. Didactic and Evaluation, in addition to those that arise from the analysis.

In the semi-structured interview, you have the freedom to introduce additional questions to delve into the subject and specify concepts to obtain more information, and it has the characteristic that the information is more manageable at the time of interpretation (Hernández and Mendoza, 2018). The content validation of the instrument was carried out through the judgment of seven experts from Mexico and Colombia. For this exercise, the content validity ratio (RVC) was applied, which qualifies the questions by means of an index proposed by Lawshe (1975), in order to determine which items of the instrument are the most appropriate according to the score from the experts.

As a result of said validation, 12 open questions were obtained, which determined the duration of the interview, which oscillated around 40 minutes, approximately.

Participants

Qualitative sampling occurs in the first instance at the time the context is selected. For this study it was decided to choose 10 schools from Mexico and Colombia. The qualitative sampling units can be people. In the case of phenomenological studies, it is suggested to have 10 cases. For this reason, teachers who had the characteristic of serving rural communities in unitary or multigrade schools were selected. The teachers have an average age of 29 years and four years of service. In the case of Mexican teachers, they are new to the teaching service and come from single-teacher schools. For their part, Colombian teachers are experienced, rooted in the community and attend up to six grades maximum. The characteristics of the interviewees can be seen in Table 1.

Table 1. Characteristics of the subjects in the sample.

Interviewed	Age	Years' Experience	Scholarship	Country	Grades attended	No. of students
Interview 2C2022	42	22	Degree	Colombia	Preschool to 5 th grade	26
Interview 3C_2022	Four. Five	23	Degree	Colombia	Preschool to 5 th grade	15
Interview 4C_2022	23	3	Degree	Colombia	1 st and 2 nd preschoolers -	30
Interview 5C_2022	24	5	Degree	Colombia	Preschool and 1 st grade	26
Interview1_C_2022	42	20	Degree	Colombia	1 st to 6 th grade -	23
Interview5_C_M_2022	30	8	master's degree	Mexico	4 th to 6 th grade of primary	14
Interview4_A_M_2021	27	3	Master's Intern	Mexico	1 st to 6 th grade -	16
Interview3_J_H2022	28	5	Degree	Mexico	4 th , 5 th and 6 th grade of primary	18
Interview2_J_M_2022	25	2	Degree	Mexico	5 th and 6 th grade -	20
Interview1_S_M_2021	24	2	Master's Intern	Mexico	1 st , 2 nd and 3 rd grade of primary	12

Source: Self-made

Results

The results were finally distributed into 10 categories since the need arose to add the categories of Teacher Training, Teacher Staff Dimension, Pandemic Changes, and Strategies during confinement. Table 2 shows the distribution of the categories with their respective codes and the number of codifications.

Table 2 . System of codes and categories

Category	Number of codes	encodings
Interactions	5	6
Role of the teacher	5	6
Planning	6	15
Assessment	15	23
Teaching strategies	20	46
Teaching tools and resources	13	37
Strategies during confinement	10	20
Teacher training	16	20
Personal dimension of the teacher	5	8
Changes during the pandemic	24	58

Source: self-made

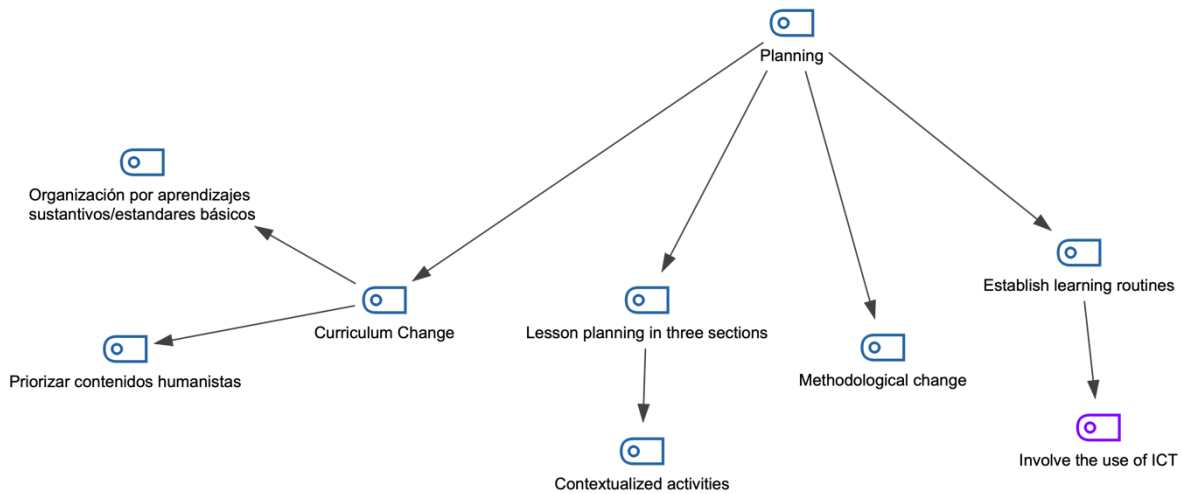
The most important findings in terms of planning, teaching strategies, resources and challenges of Mexican and Colombian teachers are described below.

Pedagogical planning in contingency time

Planning allows carrying out a sequence of activities based on the motivations, knowledge and previous knowledge of the subjects that make up the educational context. The teachers of the two countries have meeting points regarding the aspect of planning, since they started from the interests, particularities, and needs of the context and the need to order the teaching-learning process.

Figure 1 shows that in both countries the humanist contents were prioritized, because it was necessary to meet the needs of the subjects immersed in education from contextualized activities, which responded to the objectives set by the ministries of education. and the needs of each girl and boy.

Figure 1. Model code and subcode for the didactic planning category



Source: self-made

At the time of planning, a change in the curriculum of each of the institutions was suggested, since, when moving the classrooms to the homes, the situation implied the use of ICT, however, it was found that not all had access to these tools, for which teachers had to change their methodologies in order for everyone to have the right to education, it was thus that they established new routines in the learning of their students. In the words of the interviewees:

The criteria from which planning always started, obviously regardless of having a purpose, with an objective, with an evaluation, with a sequence, since the important thing about planning is always based on our substantive learning, or expected learning, which is what our program mentions to us on which the plans that we design are based on (E5C_2022).

Pedagogical strategies and didactic materials in times of pandemic

The research participants expressed that within the established strategies, the ones that were most successful were making short and explanatory videos of each of the themes, video calls, virtual classes, telephone feedback, and home visits.

One of the Mexican interviewees maintains the following:

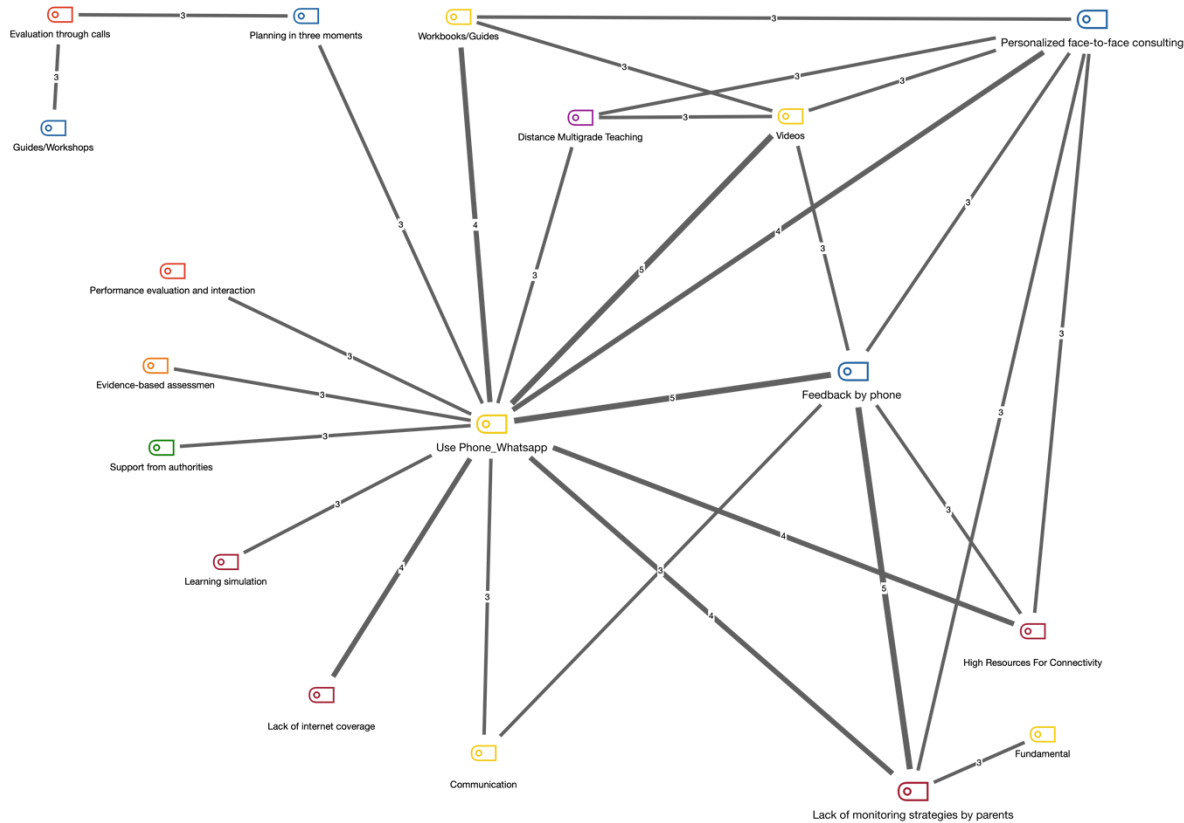
I decided to implement activities and strategies such as video calls, taking printed material to school and making appointments once a week, and then the next week receiving the material and delivering it again (E5CM_2022).

Likewise, the Colombian teachers based their strategies on the elementary learning that the students had to develop. As one teacher expressed it:

When they told us that it was our turn to serve from home, I remember that the first thing I did was how to organize, I looked at the mesh. And then I looked at the basic standards, to suddenly see, in that period or in that study time, what the children should see. And I sat on the Internet to review material, to review the material. And I made some guides that were to work from home. And what I did was that, personally, I remember that I went to a friend to print them, and I don't know how, the fact is that I organized myself as best I could and went to the headquarters to deliver them. (E2C_2022).

The didactic strategies were directly interconnected with the didactic resources and technological tools that the students had. The map of co-occurrence of categories between Teaching Strategies and Didactic Tools and Resources shows that the use of the telephone through applications such as WhatsApp has become essential to strengthen student monitoring and feedback strategies, together with face-to-face counselling. However, it also demonstrates the lack of resources for connectivity and the absence of strategies for monitoring the student by the family.

Figure 2. Code co-occurrence model between the category of Teaching Strategies and Teaching Tools and Resources



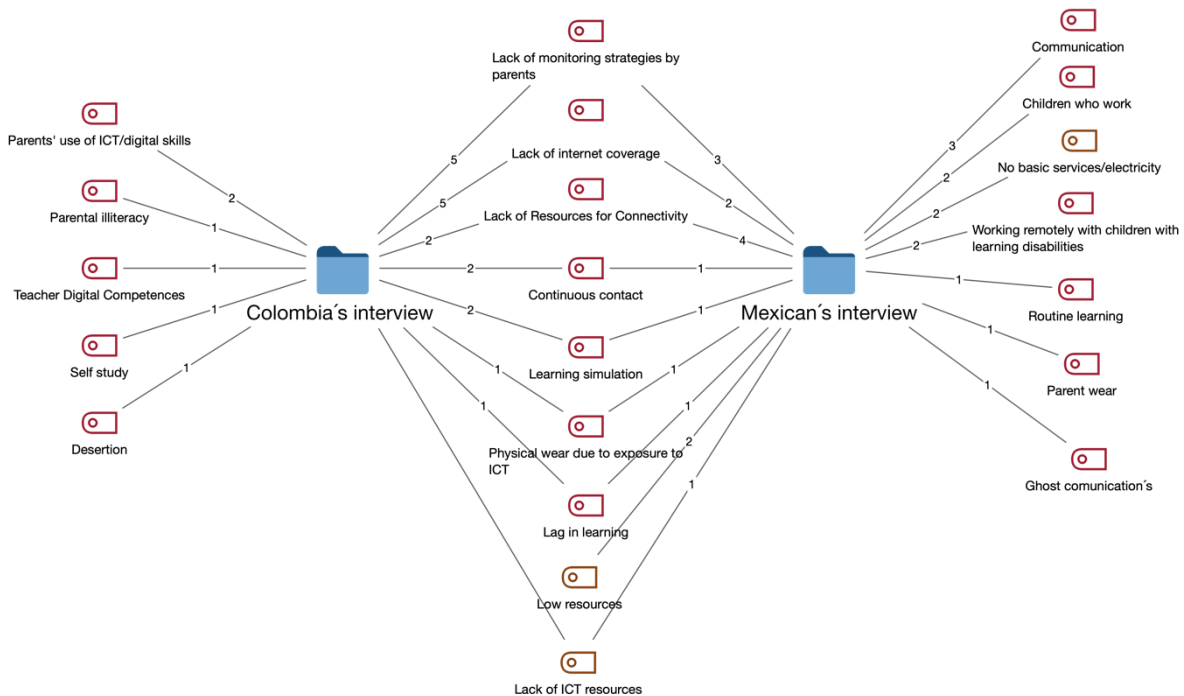
Source: self made

For the Mexican and Colombian teachers, it was important to have the resources of their students. This is why the plans were designed within the framework of the experiences of each one, in order to develop a didactic process in the teaching-learning process based on the resources that were available and within their reach.

Challenge and opportunities in rural education in times of pandemic

Teachers faced various challenges that were comparatively very similar between the two countries. Figure 3 shows the comparison of the challenges experienced by teachers in Mexico and Colombia. The codes in which there are coincidences are in the central part and are the most representative of the interviews.

Figure 3 . Two-case model between Colombia and Mexico



Source: self made

In the first place, there is access to technology to establish adequate communication to continue the classes. Internet connectivity problems are a constant in many of the narrations, this coupled with the lack of financial resources to pay for Internet service. Therefore, synchronous classes by telematic means was impossible in these contexts.

Other problems are those associated with parents: the ability to monitor their children's learning processes; attitudes of tiredness and exhaustion of parents; the illiteracy of parents and digital skills for sending homework. Clear examples are the following interview excerpts:

The family did not have the time, so it was more for them to lend the child the cell phone, for him to watch the video, than for them to do the activity with them or explain to the child which activity corresponds (E4C_2022).

In another narration, it is mentioned:

So we started with the call and as I explained to her, she didn't understand anything at all, she got desperate and cried and I felt helpless because her father or mother was there, but far from being supportive, it was the opposite, I don't know, far from understanding the child was violating him, so it was very desperate and I tried to tell the father, no, no, let me (E3JH_2022).

These narrations demonstrate the situation of families in the educational tasks of children during confinement.

Regarding the challenges associated with learning, there is a lag in student learning, the simulation of learning by parents towards teachers, absenteeism, the fact that children support the work of parents, which caused a lack of time for study, the attention of students with special needs and, lastly, the socio-emotional development of the children.

One of the opportunities that the period of distance education strengthened was the development of digital skills in teachers. In the interview process, it was possible to notice the concern of the authorities to train multigrade teachers and support them in the search for the best strategies to continue education remotely. Teacher training was mainly associated with ICT management and distance education strategies; In the case of Mexico, the pedagogical technical adviser played an important role in the organization of teachers for the planning of guides and orientation in the teaching processes of rural schools.

Discussion

The results of the interviews show that there is a great coincidence between the practices of teachers in both countries. The planning process was essential to achieve effective educational strategies in the face of various situations conditioned by the immediacy of the context, so planning allows reducing the level of uncertainty and anticipating the development of the class; At the same time, it gives coherence to the pedagogical task that marks a study plan (Carriazo, Pérez and Gaviria, 2020). Likewise, planning in light of this reality made it possible to define objectives, goals and goals of the teaching-learning process, since it sought to respond to what to teach and how to do it; In addition, provide materials and strategies to reach a certain end in the educational task (Pedrosa, Suárez and García, 2012).

Starting from the above, when interrelating the stories of the participants, it is evident that without a doubt the digital tools were not enough nor the only option to generate the learning of girls and boys; Teachers were equipped with other teaching materials and resources to ensure meaningful learning. These pedagogical resources are a key issue for the design, implementation and evaluation of training processes, together with the teaching skills and methodologies of some basic elements that determine the way in which these processes

are carried out and that condition the quality with which they are implemented. . (Gabarda, Rodríguez and González, 2021).

However, rural teachers during the pandemic were affected by a series of situations and resource limitations that hindered their teaching work, among which the lack of technological tools and connectivity stands out. Students from rural schools show greater inequality in access to the Internet. They also use the computer for repetitive activities, while students in high-income areas often use technology for higher-order thinking, problem-solving, and other intellectually challenging activities. (Wirth *et al* ., 2016).

Added to this are the sociocultural conditions of the families that in some cases did not support the educational process of their children. According to Montenegro et al. (2020), the family has played a key role during distance education; highlights the importance to carry out the tasks of the students, however, among the most frequent difficulties are the employment situation, socioeconomic level and digital skills. Primary school children require adult supervision to work remotely, so parents face a great challenge: having the intellectual and psychological conditions to handle school content, technological tools, and the ability to monitor the student (Ducoing, 2020). Faced with this reality, teachers show lags in children's learning, which coincides with what was stated by Monge, Gómez and Jiménez (2020), who highlighted that the quality of learning decreased and was accentuated by the socioeconomic conditions of the students, the digital gap and the fact that families did not know how to face their children's learning.

Conclusion

Among the implications that should be considered as a result of this research is the urgent need for government programs that are effective for multiply teaching in rural schools, where not only access to technology is given, but also empowers students. teachers, students and parents in this digital culture in favor of education.

The data shows already announced results on the lack of resources for access to technology and Internet connectivity services. Therefore, it was almost impossible to implement virtual classes.

It is evident that there is a need for an educational model for multigrade schools based on common content that allows the articulation and integration of didactic sequences that globalize knowledge in an interdisciplinary way.

In order to respond to the challenges described in the results, the following strategies are proposed to improve the situation of rural schools. In the Mexican case, it is necessary to create a program to rescue teaching trajectories and thus consolidate a training program, since teachers stated that they were new to rural schools and reported having little preparation to deal with multigrade problems and methodologies.

On the other hand, in both cases the technological equipment can be reinforced, and follow-up on the appropriate use of the tools that allow the creation of spaces for distance education in the cases of those children who, for reasons of parents' work, have to absent from schools. In addition, the proper use of ICT can be used through the model called Technological, Pedagogical and Content Knowledge (Tpack), where the teacher must master these three aspects for an adequate integration of ICT in the classroom. . All this without forgetting the promotion of active learning through strategies centered on the student.

Finally, the actions of teachers to generate printed material to give continuity to education are highlighted, for which it is proposed to generate public repositories so that other teachers have access to the materials, they can be used in the post-pandemic context and thus help regulate student learning.

The educational practices described in this document account for the actions of teachers to allow the continuity of education in conditions of inequality and precariousness, however, the teaching vocation of the interviewees stands out, the one who sought different strategies to achieve learning of the students. They got involved with parents to raise awareness about participation in educational tasks and developed materials to guarantee access to education for boys and girls in vulnerable situations.

An important aspect is that teachers expressed the need to resume strategies and forms of evaluation that they implemented during distance education, such as qualitative evaluation focused on evidence and more personalized.

In addition to their role as learning mediators, teachers recognize that the situation of distance education due to the pandemic has led to the development of technological skills and abilities, which in a short time learned the use of video platforms, videoconferences, content editing. and the design of learning guides for their students. Therefore, they have improved in the use of technology; however, there is still a need for training to manage emotions, control content in multi-grade schools, and regularize the educational gap.

These experiences of teachers may be an indication that the needs for change in the educational practices of rural teachers deserve an in-depth study to promote the generation

of new methods and improve education in rural contexts. In this sense, the contributions of each one of the teachers are very valuable in the path of transforming the theory of didactics in multigrade schools.

Future works

This work presents a general perspective of educational practice from the perspective of the teacher, it is important to continue with research that deepens the experiences and understanding of all the actors in the educational system, parents, managers and students, to have an overview of rural education and its post-pandemic transformations.

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