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Las necesidades sociales y académicas de los estudiantes de bachillerato en un entorno de la modalidad híbrida

The social and academic needs of high school students in a hybrid modality environment

As necessidades sociais e acadêmicas de estudantes do ensino médio em ambiente de modalidade híbrida

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Resumen

Son claros los nuevos retos pospandemia que ha tenido el Estado en general y las instituciones educativas en particular para mitigar la enorme brecha educativa y digital, la cual ha sido consecuencia natural de una desigualdad social en materia económica. No será posible avanzar en la implementación de un modelo educativo híbrido si primero no se solucionan problemas y necesidades básicas, como es el caso de México, donde 32.6 % de las escuelas básicas se encuentran en comunidades rurales. De hecho, en el caso concreto del estado de Guerrero, solo 47.1 % de los hogares cuenta con servicio de internet. Varias investigaciones han resaltado la importancia de la modalidad híbrida para mejorar la calidad en el aprendizaje y potenciar la autonomía del estudiante, pero también han reconocido que el analfabetismo digital y el rol pasivo del estudiante han llevado a desalentar el aprovechamiento que la tecnología ofrece. Por tanto, y considerando que la modalidad

híbrida para las escuelas se generalizará en un futuro muy cercano, surge la siguiente pregunta de investigación: ¿cuáles son las condiciones en las que se encuentran los estudiantes de dos escuelas públicas para adaptarse a esta nueva modalidad?

En concreto, la investigación fue cualitativa-fenomenológica, y se realizaron entrevistas a quince estudiantes a partir de una pregunta generadora. Los datos se analizaron apoyados de la teoría fundamentada, para lo cual se crearon grupos de códigos en el Atlas.ti v23. Se encontró que la brecha digital es el resultado de los problemas económicos y del alfabetismo digital. Además, es de suma importancia tomar en cuenta que tanto docentes como estudiantes continúan con prácticas tradicionales, lo que lleva a estos últimos, principalmente, a adoptar un rol de dependencia y pasividad.

Palabras clave: aprendizaje autónomo, brechas digitales, modalidad híbrida, modalidad presencial, modalidad virtual.

Abstract

The new post-pandemic challenges that the State in general and educational institutions in particular have had to face in order to mitigate the enormous educational and digital gap are clear, as this has been the natural consequence of social inequality in economic matters. It will not be possible to advance in the implementation of a hybrid educational model if basic problems and needs are not solved first, as is the case in Mexico, where 32.6% of basic schools are located in rural communities, in the state of Guerrero only 47.1% of households have internet service. Several researches have highlighted the importance of the hybrid modality to improve the quality of learning and enhance student autonomy, but they have also recognized that digital illiteracy and the passive role of the student have led to discourage the use of technology. Considering that the hybrid modality for schools is a very near future, the question for this paper arises: what are the conditions in which students in two public schools are able to adapt to this new modality? The new post-pandemic challenges that the State in general and educational institutions in particular have had to face in order to mitigate the enormous educational and digital gap are clear, as this has been the natural consequence of social inequality in economic matters. It will not be possible to advance in the implementation of a hybrid educational model if basic problems and needs are not solved first, as is the case in Mexico, where 32.6% of basic schools are located in rural communities, in the state of Guerrero only 47.1% of households have internet service. Several researches have highlighted the importance of the hybrid modality to improve the quality of learning

and enhance student autonomy, but they have also recognized that digital illiteracy and the passive role of the student have led to discourage the use of technology. Considering that the hybrid modality for schools is a very near future, the question for this paper arises: what are the conditions in which students in two public schools are able to adapt to this new modality? The research was qualitative-phenomenological, interviews were conducted with fifteen students based on a generative question. The data were analyzed with the support of grounded theory, creating code groups in ATLAS.ti v23. It was found that the digital divide is not only the result of economic problems and digital literacy, it is also of utmost importance to take into account that both teachers and students continue with traditional practices, the latter of dependence and passivity.

Keywords: Autonomous learning, digital divide, hybrid modality, face-to-face modality, virtual modality.

Resumo

São claros os novos desafios pós-pandemia que o Estado em geral e as instituições educativas em particular têm tido para mitigar o enorme fosso educativo e digital, que tem sido uma consequência natural da desigualdade social em matéria económica. Não será possível avançar na implementação de um modelo educacional híbrido se os problemas e necessidades básicas não forem resolvidos primeiro, como é o caso do México, onde 32,6% das escolas básicas estão localizadas em comunidades rurais. Na verdade, no caso específico do estado de Guerrero, apenas 47,1% dos domicílios possuem serviço de internet. Diversas investigações destacaram a importância da modalidade híbrida para melhorar a qualidade da aprendizagem e aumentar a autonomia dos alunos, mas também reconheceram que o analfabetismo digital e o papel passivo do aluno levaram a desencorajar o uso que a tecnologia oferece. Assim, e considerando que a modalidade híbrida para escolas se difundirá num futuro muito próximo, surge a seguinte questão de investigação: quais as condições em que se encontram os alunos de duas escolas públicas para se adaptarem a esta nova modalidade?

Especificamente, a pesquisa foi qualitativa-fenomenológica e foram realizadas entrevistas com quinze estudantes a partir de uma questão geradora. Os dados foram analisados apoiados na teoria fundamentada, para a qual foram criados grupos de códigos no Atlas.ti v23. Verificou-se que a exclusão digital é o resultado de problemas económicos e de literacia digital. Além disso, é extremamente importante levar em conta que tanto professores como

alunos continuam com práticas tradicionais, o que leva estes últimos, principalmente, a adotarem um papel de dependência e passividade.

Palavras-chave: aprendizagem autônoma, exclusão digital, modalidade híbrida, modalidade presencial, modalidade virtual.

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Introduction

In Mexico, starting in August 2021, when the covid-19 pandemic stopped representing a threat, the return to in-person classes began, although the Ministry of Public Education (SEP) reported that this process would be voluntary and provided a guide for the responsible and orderly return to schools. In the state of Guerrero, schools followed this protocol, and students attended in a staggered manner.

For example, at the Colegio de Bachilleres campus number 2, the return was organized in such a way that each grade attended on different days. After three months, they began attending two days a week, alternating between in-person and synchronous virtual classes. Then, as contagion cases in the state decreased and some health measures were relaxed, 100% in-person classes returned.

This caused the Meet video calling platform to stop being used by both teachers and students, and many teachers stopped using Classroom due to some students having difficulties connecting to the internet (Teacher, personal communication, 2023).

In Community Telebachillerato 121, the return to classes after the pandemic was also staggered. The three grades, each with a single group, attended in-person classes on Mondays, Wednesdays and Fridays, since the groups were small and could attend as a whole. On Tuesdays and Thursdays, when they did not have in-person classes, they dedicated themselves to completing the tasks that were sent via WhatsApp.

However, once the state government allowed the return to classes without capacity restrictions, platforms for virtual classes such as Google Meet and Zoom stopped being used completely due to the cost for students to purchase mobile data cards (Coordinadora of Telebachillerato 121, personal communication, 2023).

Student inequalities during the virtual modality

The virtual modality has highlighted educational inequalities, not only in rural sectors. Although the United Nations Educational, Scientific and Cultural Organization confirms that students who lack access to digitalization are the most affected, in some locations with easy connectivity, students faced other limitations, such as preparing for management team, teacher training, lack of infrastructure and other resources, which has contributed to school dropouts (UNESCO, 2022).

To this reality, Wirth *et al*. (2016, cited by González Fernández *et al*., 2023) add digital illiteracy, since students in rural schools use the computer mainly repetitively, while high-income students use it to solve problems. This digital inequality disproportionately affects those least favored by technology, who learn less and are at greater risk of dropping out of school (Rama, 2020).

Situation of students during virtual classes in Mexico

According to the results of the National Institute for Educational Evaluation (2019), in Mexico, 32% of basic education schools are located in rural communities, where many lack the necessary basic facilities and resources; For example, they do not have drinking water or electricity, they lack seats where students can study comfortably, they do not have toilets and, of course, they do not have computers.

According to the National Survey on Availability and Use of Information Technologies in Homes of the National Institute of Statistics and Geography (Inegi) (2020), Guerrero is the second state in Mexico with the lowest percentage of homes that have a computer, with barely 27.8%, while the national average is 44.2%. Regarding internet access, only 47.1% of homes in Guerrero have this service, compared to 84.0% that have television.

Hybrid education as the new modality

Information and communication technologies (ICT) constitute a crucial part of the economic, social and technological changes that are occurring today. In fact, important technological advances force educational institutions to immerse themselves in the digital era, since the integration of ICT in education allows them to enrich, transform and complement the academic experience of students (Salmerón Navarro, 2022). With the pandemic, not only was the importance of in-person education revalued, but an educational model that combines in-person and distance teaching, both synchronous and asynchronous,

also began to take shape to adapt to the established learning objectives and content (Rama, 2020).

Faced with this reality, hybrid education became an indispensable tool to continue with training activities (Soletic, 2021), since it allows diversifying spaces and times for individual and group work and even for tutoring. Studies have confirmed that blended learning has given positive results to students, as it helps them plan and improve their learning, while reducing the failure rate (Kavitha and Jaisingh, 2019). This approach provides students with a certain autonomy in their learning process, as it gives them the opportunity to handle the content independently and understand it from different perspectives (Turpin, 2018).

However, although hybrid education offers new flexible, attractive and adaptable models to the needs of students, the development of infrastructure and technological tools that take into account the sociocultural characteristics of each locality is also required. In short, public policies and projects that reduce digital gaps must be proposed (Secretaría de Educación Pública, 2021).

In Mexico, education expert and doctor of pedagogy Díaz Barriga (2021) maintains that school as we knew it before the pandemic will no longer exist, so hybrid education seems to be the right option for the new normal. However, it is not adequately clarified how this model is conceived, although it is mentioned that this educational approach has already been proposed in the state of Puebla. But not only education experts foresee the need for technologies in the classroom; The Connectivity Program in Public Places, promoted by the Ministry of Communications and Transportation (2023), aims to contribute to the achievement of universal free Internet coverage, especially in those places located within localities with priority attention for social coverage.

The problems with the new hybrid modality

We live in a period of human history where ICTs have great relevance in all areas of life, including education, which became evident with the arrival of the pandemic. In this sense, education and technology experts constantly mention that it is no longer possible to carry out the teaching-learning process without using ICT, which is why the hybrid modality seems to be the best strategy to carry out the transformation. educational.

However, the reality of developing countries is far from the technological-educational utopia to which we aspire, since education mediated by emerging technology contributes to

the increase in educational inequality and clearly exposes the gaps in infrastructure, connectivity and access for both teachers and students (Ruiz, 2020).

Another problem resulting from working in virtual classes during the pandemic has been learning achievement. Studies show that the teacher was once again the main actor, there were no discussions in class and no experiential learning occurred; therefore, students stated that schoolwork during the pandemic did not encourage critical thinking but instead promoted rote learning (Advance Illinois, 2020). This means that technology, by itself, does not guarantee that the student learns, since it is the teacher who must act as a guide and counselor, as long as he or she has the necessary skills to develop teaching material through the use of digital platforms (Guerrero, cited by Navarrete Cueto and Flores Peña, 2021).

It is evident that currently there is no public policy that establishes the mandatory nature of the hybrid modality; However, the rapid development of technology and the experience of the actors in the educational system in virtual work ensure the prompt arrival of this modality. Therefore, the guiding question for this work was the following: what are the conditions in which the students of two public schools find themselves to adapt to this new modality?

The two public high school schools selected were the Colegio de Bachilleres (located in the city) and the Telebachillerato Comunitario 121 (located in a rural area), both belonging to the municipality of Acapulco, Guerrero. The objective was to evaluate the social and academic needs of the students to adapt to working with the hybrid modality based on the experience obtained during the covid -19 pandemic.

Materials and methods

The qualitative paradigm was chosen because the interest focused on understanding the deep experiences of the students - including their descriptions, beliefs, emotions and feelings - while they worked with the virtual modality during the pandemic (Aguirre García and Jaramillo Echeverri, 2012). Through this approach, it is possible to explore the economic and academic disposition that students have to work with the hybrid modality.

Method

The phenomenological method was used to study the events as they are experienced, lived and perceived by the students. In this sense, interviews were the appropriate instrument to obtain a deep understanding of the subjects' reality. Likewise, a guiding question was

designed that allowed participants to openly express their experiences. To formulate this question, the objectives of the study and the theoretical contributions indicated in the theoretical framework were taken into account, which gave the following result: how did you experience virtual classes and hybrid classes during the pandemic? Based on the students' responses, other questions were raised to enrich the study.

Participants

The participants in this study were 15 students: 5 of them from the Community Telebachillerato 121, and 10 from the Colegio de Bachilleres campus 2. The selection criterion used was key informants, since the students from both high school schools had attended virtual classes for four semesters, which allowed them to provide complete, in-depth and reliable information. It is important to note that the schools receive students from both the community where they are located and from others nearby, some of which are in more precarious conditions.

The participants are minors, and the approach to them was carried out through the school coordinators. The interviews were conducted during their class hours. Both coordinators and participants were provided with a detailed explanation of the research, its importance was explained, they were assured of participant anonymity, and they were offered the opportunity to review the results if they wished to make comments. In addition, the coordinator of the Community Telebachillerato and a teacher from the Colegio de Bachilleres were interviewed to obtain information about how they worked during and after the pandemic.

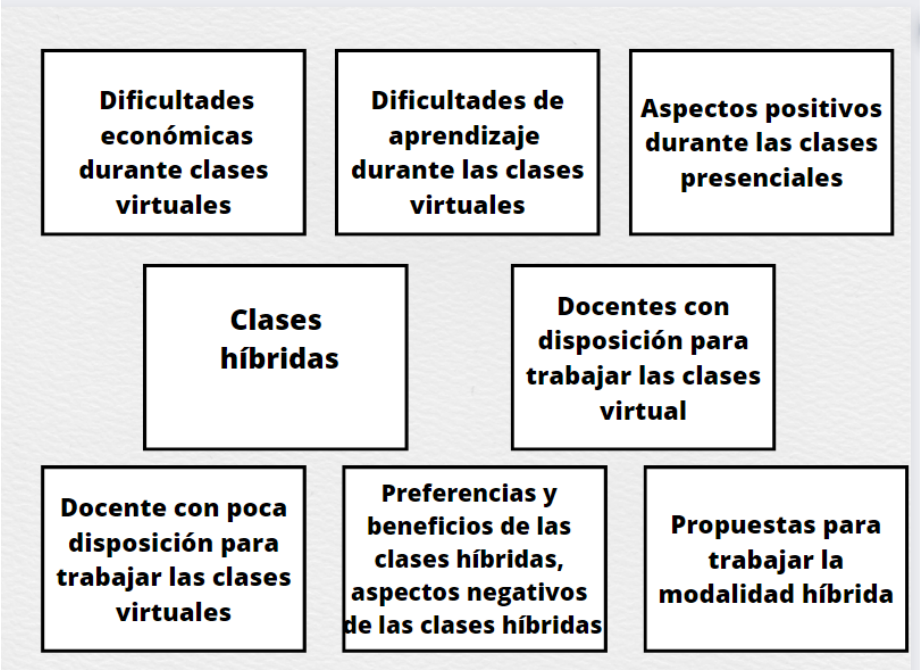
Analysis of data

For data analysis, grounded theory was applied using analysis by emerging categories. Likewise, open, axial and selective coding was used to interpret the data and the *software* Atlas.ti v23 to organize and analyze the collected information.

Results

A total of 198 codes were generated, which addressed a variety of topics that went beyond economic and material problems and digital illiteracy. These codes were organized into eight groups (figure 1), from which various networks were formed.

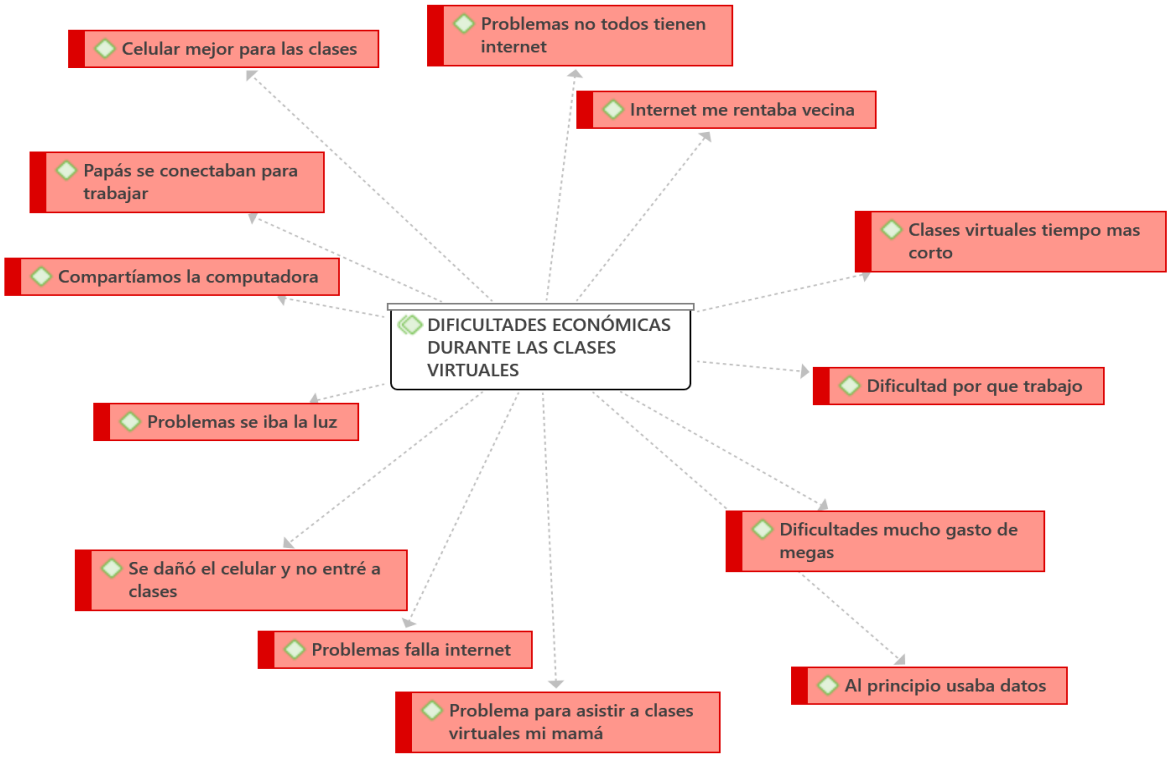
Figure 1. Code Groups



Source: self made

Below are the networks that were created. In figure 2. The network corresponds to the economic difficulties that students faced during virtual classes.

Figure 2. Network of economic difficulties during virtual classes



Source: self made

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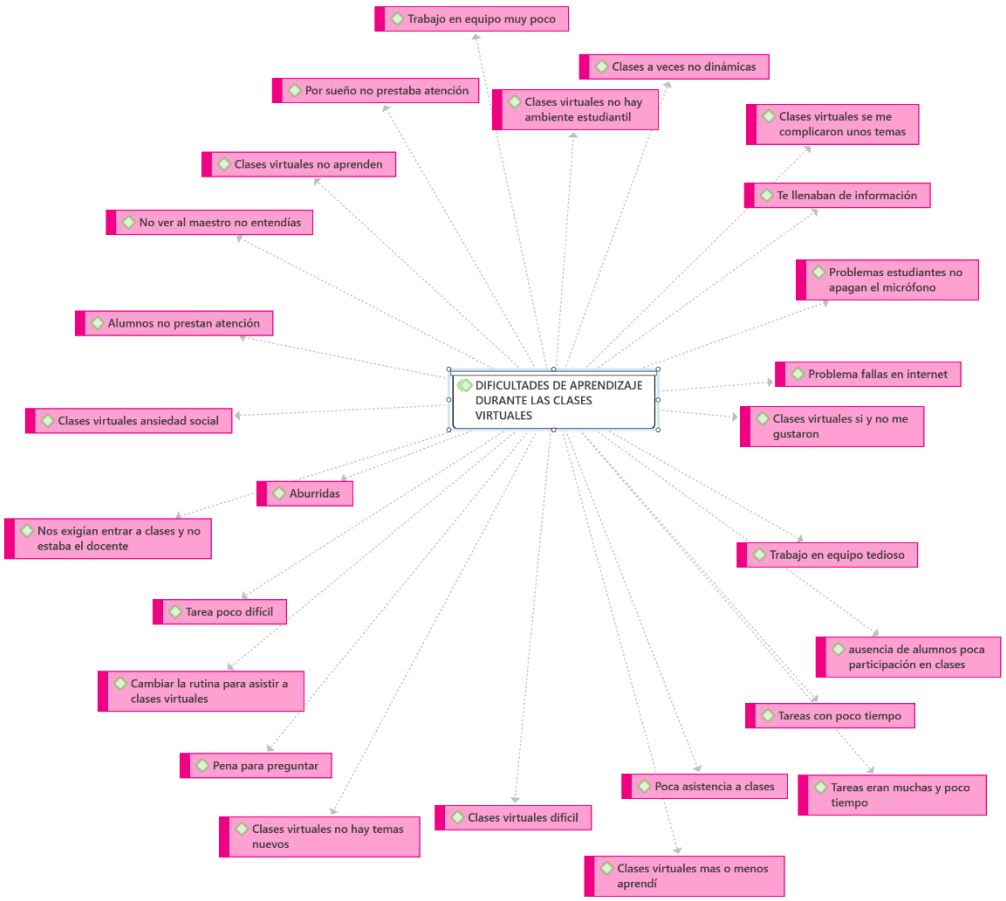
Regarding economic problems, the students commented the following: “As I worked, it became difficult for me (Simoney Ortiz, personal communication, 2023). Some more declared that “they spent a lot of megabytes and so I had to meet with some classmates to be able to put mega on the phone so that we could all listen to the class” (Lizeth Dorantes, personal communication, 2023).

Figure 3 shows the opinions of the students regarding the difficulties they had during virtual classes.

Figure 3. Learning difficulties network during virtual classes



Source: self made

In this regard, they stated that the classes were difficult and boring, in addition to the fact that the teachers “sometimes filled you with information” (Sofía Vázquez, personal communication, 2023) and left them little time to hand in assignments. They also assured that attendance at virtual classes was low: “There were very few of us who attended classes” (Carlos Moisés, personal communication, date).

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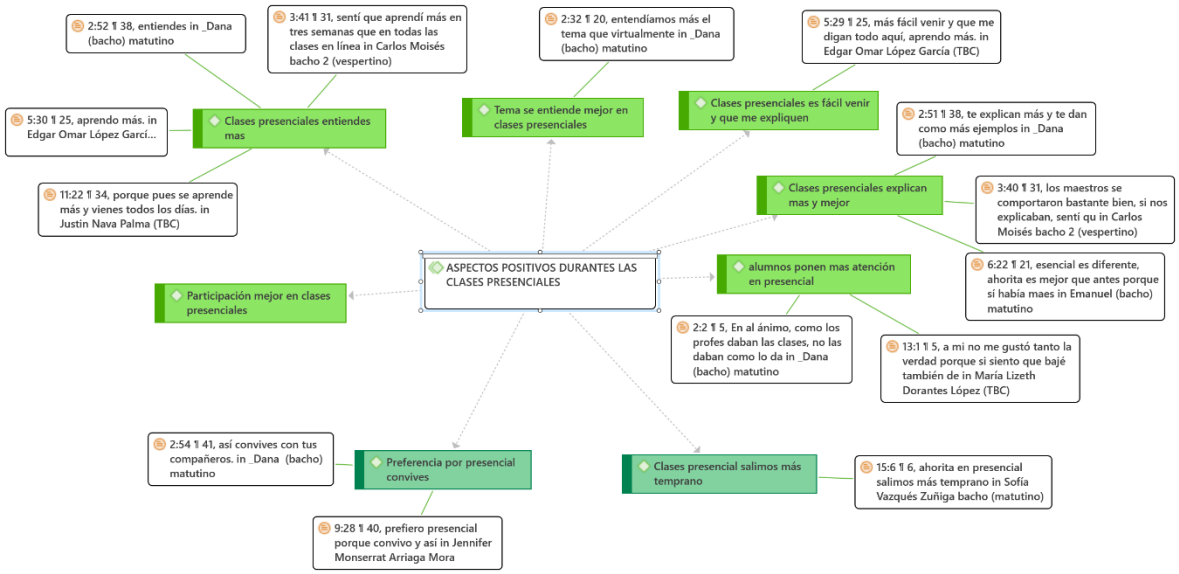
In relation to teamwork, those interviewed commented: "There was almost no teamwork because there were very few of us who attended classes" (Carlos Moisés, personal communication, 2023).

The students point out the positive experiences that working in person has given them (Figure 4).

Figure 4. Network of positive aspects of face-to-face classes



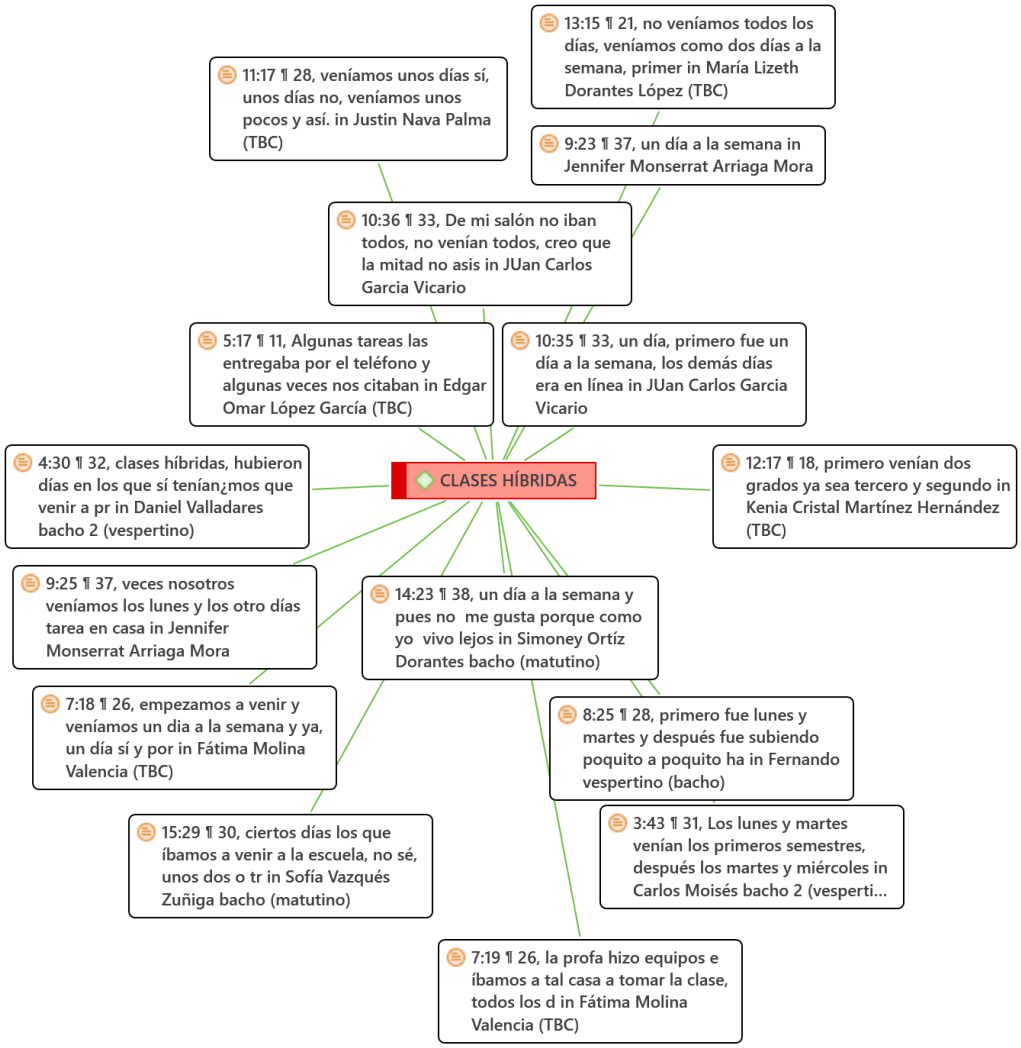
Source: self made

These positive aspects of face-to-face classes were grouped into two types:

- Aspects related to the teaching and learning process: "Students participate more" (Dana, personal communication, 2023), "they understand more" (Dana, Personal communication, 2023), "it is easier to come and have them explain it to me" (Edgar López, personal communication, date) and "students pay more attention" (Dana, personal communication, 2023).
- They point out that there is more coexistence with colleagues and more comfort with the schedule.

The gradual return to classes also left experiences for the students, when they worked in the hybrid modality (Figure 5).

Figure 5. Hybrid class network



Source: self made

below: “We started coming one day a week” (Fátima Molina, personal communication, 2023); “On Mondays the first semesters came, then on Tuesdays and Wednesdays the second semesters came, on Thursdays and Fridays the fifth semesters came” (Carlos Moisés, personal communication, 2023). “There were obviously hybrid classes, there were days when we did have to come in person, there were days when we had to be in online classes” (Daniel Valladares, personal communication, 2023).

In figure 6 you can see the positive perception that the students had of their teachers during the virtual classes.

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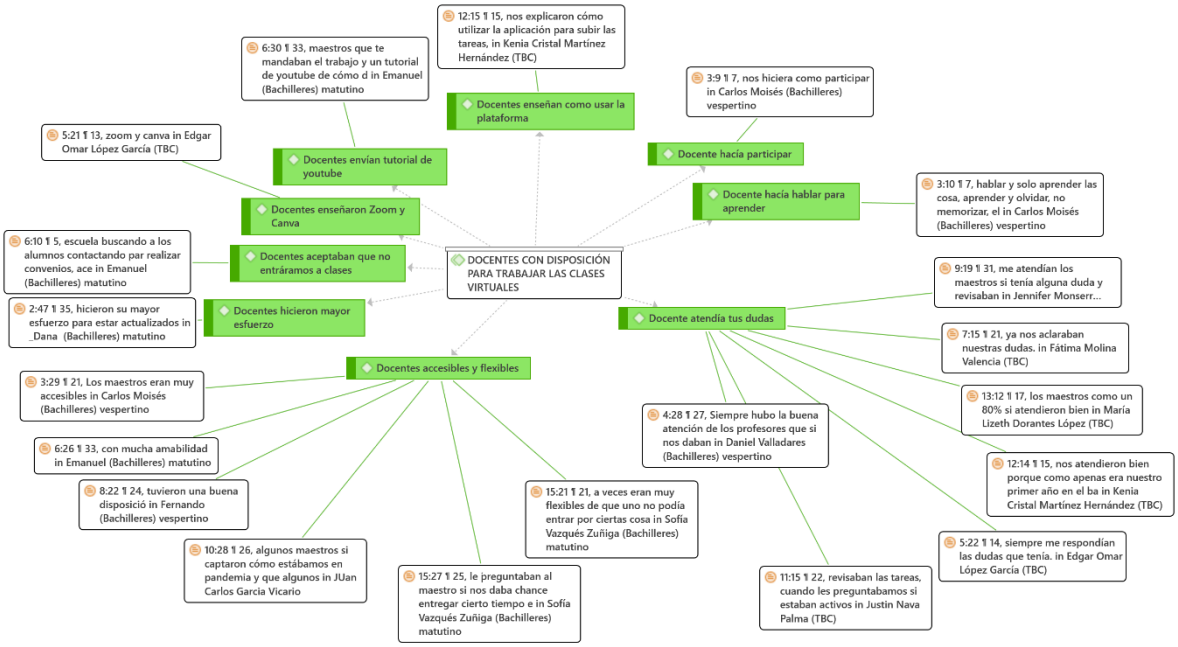
Figure 6. Network of teachers willing to work in virtual classes



Source: self made

The interviewees stated the following: “There was always good attention from the teachers” (Daniel Valladares, personal communication, 2012), “they took good care of us” (Cristal Martínez, personal communication, 2023), “they always answered the questions I had, personal communication, 2023), “the teachers helped me if I had any questions” (Monserrat Arriaga, personal communication, 2023), “the teachers were very accessible” (Carlos Moisés, personal communication, 2023).

Figure 7 shows the negative perception that students had about their teachers' behavior.

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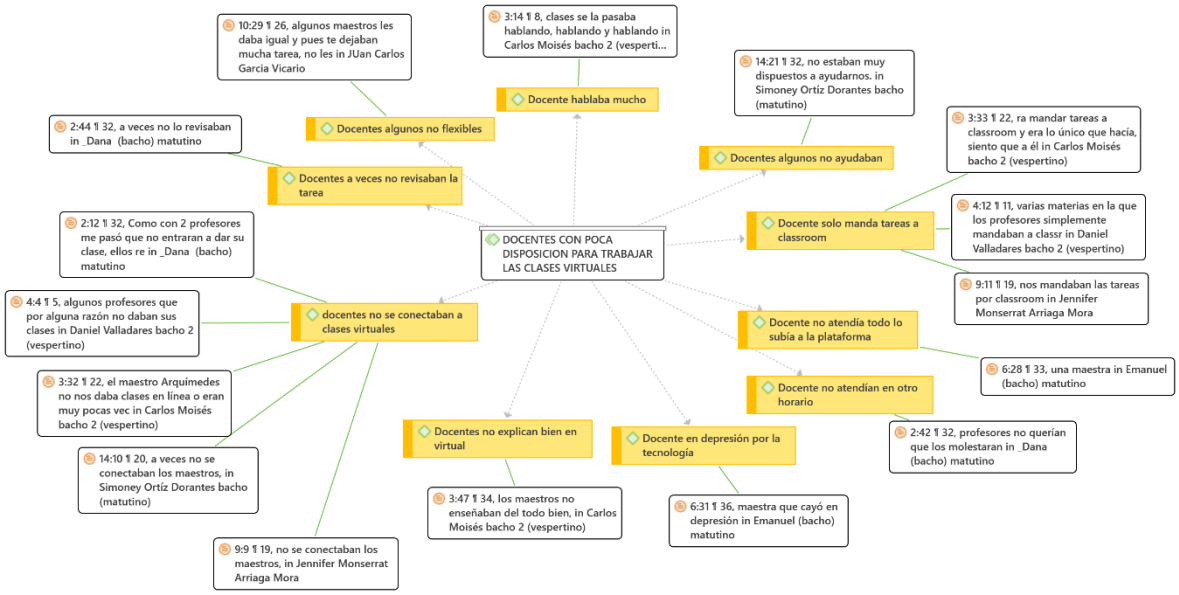
Figure 7. Teacher network with little provision for virtual classes

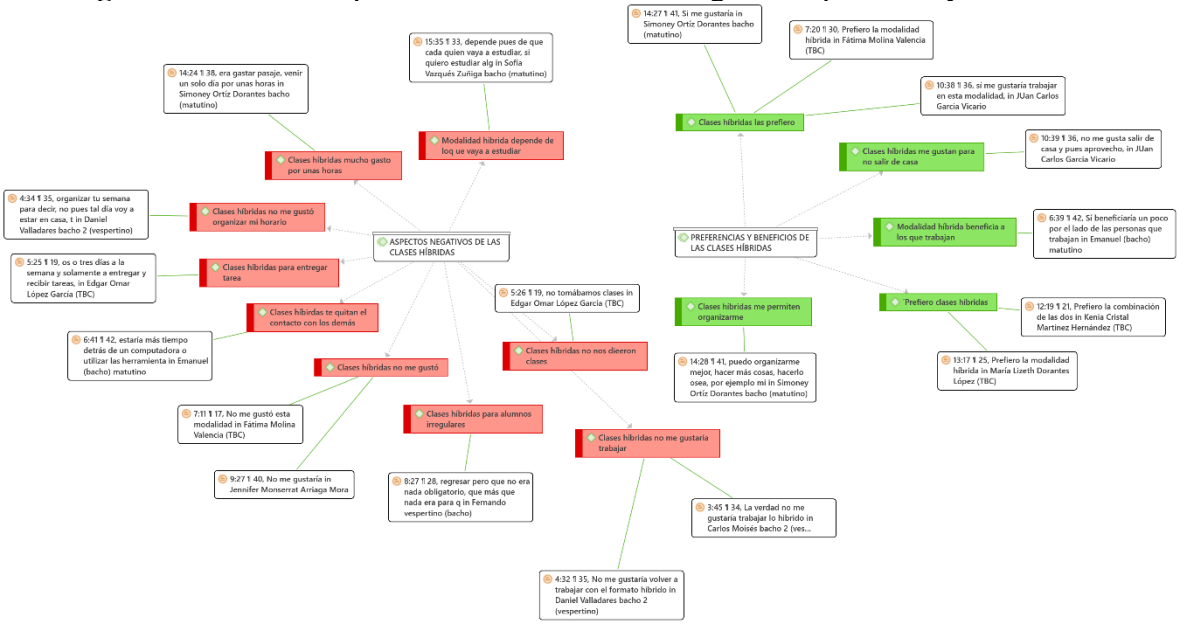


Source: self made

"Some teachers did not teach their classes" (Daniel Valladares, personal communication, 2023), "some teachers did not care and they left you a lot of homework" (Dana, personal communication, 2023), "They were not very willing to help us" (Simoney Ortíz, personal communication, 2023).

Based on the experience that the students had during the hybrid classes, the network that appears in Figure 8 could be created, in which the positive and negative aspects are compared.

Figure 8. Network of preferences, benefits and negative aspects of hybrid classes



Source: self made

The students describe the negative aspects: “We did not take classes” (Edgar López, personal communication, 2023), “a lot of expense for many hours” (Simoney Ortiz, personal communication, 2023), “hybrid classes take away your contact with others” (Emanuel Linara, personal communication, 2023).

Regarding the preferences and benefits of hybrid classes, students commented that “they prefer hybrid classes” (Fátima Molina, personal communication, 2023), “it benefits those who work” (Emanuel Linara, personal communication, 2023), “Hybrid classes allow me to organize myself” (Simoney Ortiz, personal communication, 2023).

Finally, in Figure 9, the students' proposals for working on the hybrid modality are presented.

Figure 9. Network of proposals to work on the hybrid modality

Source: self made

Some of the comments on this proposal were the following:

“I would like it to be optional” (José Linara, personal communication, 2023), “go first in person and also support me with the modality in line, complement” (Kenia Martínez, personal communication, 2023), “ I would like teachers to use innovative programs” (Juan Carlos García, personal communication, 2023), “I would like teachers to use innovative programs” (Juan Carlos García, personal communication, 2023).

Discussion

post-pandemic educational approach, requires equipment, accessibility and skills in the management of ICT. For this reason, for low-income students, this modality represents difficulties in terms of access to digital resources, such as the inability to contract internet services or purchase mobile devices or computers. Specifically, the students of Community Telebachillerato 121, who reside in a rural community and have a very low economic level, were the most affected by these digital limitations, which highlights the gaps in infrastructure, connectivity and access for both teachers and for the students (Ruiz, 2020).

On the other hand, when students from both schools describe the teachers' performance in the teaching process in the virtual modality, they refer not only to the tools used and the tasks assigned, but also to boredom, lack of attention and difficulty learning when not having the physical presence of the teacher.

These situations demonstrate that students, as Turpin (2018) points out, have not managed to work autonomously, an essential aspect on which the hybrid modality must be based. Likewise, teachers lack knowledge about educational technologies, which has prevented classes from being dynamic and has made student learning even more difficult. Furthermore, virtual learning resources have not been used to the maximum, which has led to the replacement of components of traditional teaching with new forms of teaching work (Rama, 2020).

For students, learning is more effective during the face-to-face modality, since virtual work did not yield the positive results described by Kavitha and Jaisingh (2019), who indicate that blended learning facilitates planning and increases academic performance.

On the other hand, those interviewed stated that they had not received synchronous classes, and other teachers limited themselves to teaching master classes where participation, exchange of ideas, or debate among students were not encouraged. Instead, they assigned a large number of tasks and practical work that needed to be uploaded to the platform. That is, some teachers promoted and reinforced memorization.

In virtual classes, the teacher once again occupied the lead role, and class discussions were not held or experiential learning was encouraged (Advance Illinois, 2020). In other words, teachers maintained the same main role that they had before the pandemic, which is why they relegated the student to a secondary role as a simple passive recipient of information (Guerrero, 2019, cited by Navarrete and Flores, 2021).

Conclusions

The conclusions were structured around the three barriers that have contributed to social disparities among students during the pandemic, since other reflections and proposals emerged from them. Firstly, the economic barrier is identified, since the deficiencies and difficulties faced by the students are evident, such as problems of economic income in their families, the lack or irregularity in public services (such as electricity) and the absence of spaces suitable within the home to participate in virtual classes without distractions (such as internal and external noises, presence of family members and nuisances such as mosquitoes). These challenges have been the main obstacles that have contributed to increasing the economic gap between students.

Regarding the material barrier, some students at the Colegio de Bachilleres campus 2 face difficulties by not having a computer (a more appropriate tool for academic work), so they are forced to use their cell phones. On the other hand, Telebachillerato 121 students face the problem of not having access to internet services in their homes, and many do not even have a cell phone or a computer. This marked difference once again highlights the level of disadvantage that students in a rural school find themselves in.

On the other hand, it can be indicated that the rejection of virtual education is also due to the lack of digital literacy, both on the part of teachers and students. Unfortunately, this situation leads to both social actors continuing to work in a traditional way, where the student continues to depend completely on the teacher's instructions. This barrier perpetuates a rote learning process and limits opportunities to develop critical and autonomous thinking. Simply put, the predominance of teacher exposure in the virtual context has led to some students experiencing boredom, drowsiness, and distractions.

To address economic and material barriers, it is proposed that, once the hybrid modality is implemented in schools, they have the necessary technological resources, such as classrooms equipped with computers and the Internet so that students have an adequate space to carry out virtual activities. corresponding to said modality.

Regarding the digital barrier and the learning and teaching style, it is essential to focus on creating a culture that promotes the use of new information, communication, knowledge and digital learning technologies (ICTCAD). However, before doing so, it is crucial that teachers learn to play the role of guides or facilitators of learning rather than being considered the sole holders of absolute knowledge.

Future lines of research

This work represents an opportunity for reflection in the face of the new educational modality. On the one hand, it offers the possibility to various social actors, such as managers, teachers, parents and students, to identify and recognize their weaknesses and needs, which will allow them to propose solutions and begin to prepare to face this new technological change. On the other hand, it can serve as a guide for future research that evaluates the conditions of public schools regarding the implementation of the hybrid modality.

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