


Pre-service teachers' perceptions on the use of WhatsApp for the teaching of English in two public schools in Pereira, Risaralda

Percepciones de futuros docentes sobre el uso de WhatsApp para enseñar inglés en dos colegios públicos de Pereira, Risaralda

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ABSTRACT

The following paper is a qualitative research case study that intended to identify the perceptions of future English teachers about WhatsApp as an educational resource for teaching the English language in two public schools in Pereira, Colombia during Covid-19 pandemic. The data was gathered through virtual questionnaires to know the insights and experiences during the implementation of WhatsApp to guide an English course. The findings reveal that WhatsApp (WA) offered pre-service teachers the possibility for interaction, access to content and materials, and promotion of learners' autonomy. Furthermore, findings show some downsides related to connectivity, technological concerns and diverse limitations mainly experienced during the Covid-19 pandemic.

Keywords: english language teaching; english as a foreign language; pre-service teachers; virtual learning; WhatsApp.

RESUMEN

El siguiente trabajo es un estudio de caso de investigación cualitativa que tuvo como objetivo identificar las percepciones de los futuros docentes en formación en inglés sobre WhatsApp como recurso educativo para la enseñanza del idioma inglés en dos colegios públicos de Pereira, Colombia durante la pandemia del Covid-19. Los datos fueron recolectados a través de cuestionarios virtuales para conocer las reflexiones y experiencias durante la implementación de WhatsApp (WA) para orientar un curso de inglés. Los hallazgos revelan que WhatsApp ofreció a los futuros docentes la posibilidad de interacción, acceso a contenidos y materiales y promoción de la autonomía. Además, los hallazgos muestran algunas desventajas relacionadas con la conectividad, preocupaciones tecnológicas y diversas limitaciones experimentadas principalmente durante la pandemia de Covid-19.

Palabras clave: enseñanza del idioma inglés; inglés como lengua extranjera; futuros profesores; aprendizaje virtual; WhatsApp.

INTRODUCTION

The way education has evolved lately is a response to people's needs in the 21st century, a change that has brought technology into the academic field. Since 2003, The Colombian government has embarked on increasing access to Information and Communication Technologies (ICTs) for its inhabitants, allowing the public to use these for various purposes, like teaching. Throughout this period, the Colombian government has been working to enhance local social, economic, and cultural aspects using technological devices that facilitate communication and learning. ICTs are no longer a complement to learning instead, they have become the primary means to exchange information in both personal and academic environments after the COVID-19 pandemic, which dramatically modified most people's way of living, forcing a search for new adaptations to the new reality (Vigil García et al., 2020; Maghfira, 2020; Adelson & Keen, 2023). An alternative for education during the COVID-19 pandemic was switching face-to-face classes to virtually mediated environments through platforms such as Google Meet and Zoom, using digital devices such as cell phones and tablets. Giraldo Cadavid and Fernández García (2023) discuss the importance of incorporating such devices for reaching rural zones with deficient internet access.

Even though this option seemed initially feasible, it revealed inequalities within the country regarding internet accessibility and the availability of devices in vulnerable places. Zoom and Meet require both high internet speeds and storage space, increasing barriers to access virtual education for people in low socio-economic strata and complicating the linking of rural areas; thus, the need for other alternatives and devices to reach a wider population has become vital (García Gutiérrez et al., 2023). The government, in collaboration with local educational institutions, concluded that most of the population (119% of

them) has a mobile device in their homes (Medina, 2020), which encouraged the integration of smartphones in most educational institutions using applications or platforms like WhatsApp as a way to transfer synchronous sessions to asynchronous ones, making it the most suitable alternative for rural schools and low-income students to advance their learning processes (Domenech Pantoja et al., 2023).

Before COVID-19, new studies in learning through virtual means proposed alternatives for supplying educational needs in environments different from schools (Forbes, 2021); for instance, research conducted by Mistar and Embi (2016) in Malaysia, Mbukusa (2018) in Namibia, and Wijaya (2018) in Surabaya revealed that despite students' issues regarding internet connection, speed, and limited availability during their learning process, they perceived WhatsApp as a beneficial tool in helping them learn English. The students saw this application as a support to complement their learning process, and integrating it allowed learners to improve English skills like reading and writing. Robles et al. (2019) found that students believed that incorporating WhatsApp into their academic lives contributed highly to communication among peers and faculty. This perception enables the learner's active participation in their learning process, turning knowledge into something meaningful; the researchers concluded, "How a teacher intervenes inside a WhatsApp group encourages or discourages students' interactions" (p. 245), revealing the importance of the educator's role in virtual scenarios and how their guidance and technological knowledge can positively or negatively influence the conditions mediating the learning process (Camacho Vásquez et al., 2023; Peña Coronado & Cano Velásquez, 2023).

Even if using WhatsApp for education purposes is still a recent phenomenon requiring more exploration within this field, it carries different

advantages concerning the learning process, like leading parents and teachers into more active roles (Afzal & Abdullah, 2022). This study's purpose is to describe the perceptions of pre-service teachers in an English language teaching program regarding WhatsApp's use as a resource to promote learning and to acknowledge this application's limitations and strengths in an academic setting.

The study had two main objectives: to collect pre-service teachers' perceptions and reactions about WhatsApp's implementation and integration as an educational means of communication. Secondly, the study examined pre-service teachers' role and intervention in the English classes, the material, and the resources used to facilitate learning. The project sought to expose high school and middle school learners to 4 hours of English per week for ten months.

Literature review

During the COVID-19 pandemic, teachers started implementing different strategies and tools to enable students access to classes. In the study by Abiky (2021), WhatsApp was the primary tool to facilitate the classes. The study reported that students who used WhatsApp found it engaging for their learning process. However, Albiky suggests that when using WhatsApp as an online learning tool, it is necessary to invest time and effort in explaining to students how to use this application for academic purposes. Furthermore, this research highlights WhatsApp's great potential to improve students' writing competence. Because they are familiar with it, it is easier for them to write and receive feedback, benefiting students in their written production.

The results of Abiky's study align with Maghfira's (2020) study. The latter reports that students instructed in WhatsApp's use for writing descriptive texts are likelier to succeed in their writing process. Thus, Maghfira recommends profiting from WhatsApp elements such as audio, images, and prompt descriptions to help learners engage in the

writing task. Regarding teachers' perceptions of WhatsApp's use, they expressed that using this tool needs to be accompanied by careful planning: an opening, an implementation, and a closing stage. By following these stages, teachers perceived WhatsApp as a positive tool that boosted students' learning process during the COVID-19 pandemic, making learning more effective and efficient.

Similar findings appeared in studies by Ishtiaq Khan *et al.* (2021) and Palupi *et al.* (2023). These authors state that for successfully implementing WhatsApp with students, it is necessary to guide and model the activities. Even though this study focused on the development of vocabulary using WhatsApp, findings show that students had a positive perception toward WhatsApp's use for learning new vocabulary, reading, writing, and speaking, "Most learners indicated that learning vocabulary through WhatsApp is fun, and they acknowledged it was convenient for academic engagement" (Ishtiaq Khan *et al.*, 2021, p.7). Both studies revealed that WhatsApp use was vital for progress in vocabulary, reading, writing, listening, and speaking skills.

Concerning teachers' and students' perceptions of WhatsApp's usefulness as a learning tool, Munir *et al.* (2021), Fitri and Tiarina (2021), and Samsiya *et al.* (2022) point out that students and teachers have positive views. Since WhatsApp is easy to use, students and teachers are more familiar with its features, making communication and learning more practical than other tools. However, Munir *et al.* (2021) explain that one of the disadvantages of using WhatsApp as a learning tool is that it facilitates cheating. Therefore, the authors do not recommend using WhatsApp to assess students' knowledge but to increase interactivity.

Concerning students' connectedness and support for online learning, Mulyono *et al.* (2021) report that learners accepted social media as a way to support studying and felt connected to the process. There was high acceptance since students perceived WA as practical and available for learning and

motivation, creating an environment of connectedness with their friends. Learners expressed that it enabled them to obtain learning-related information and get involved in learning discussions. The authors identified two social problems that may interfere with the learning process. Firstly, some displeasure and struggle to interact with peers and challenges to achieve academic objectives. However, the authors recommend that online learning requires planning, material design, and the inclusion of interactive and communicative activities to help students learn by using this technological tool.

Another study by Guadamuz-Villalobos (2020) shows the benefit of using smartphone applications like WA to increase communication. Students preferred WA due to the immediacy and portability of communication. They also suggested that it was practical to remind them of important dates, content evaluation, event locations, and receiving material to support class content. Nevertheless, the researchers concluded that communication can be interfered with when messages are in text, and audio might work better for reducing communication breakdown. In conclusion, learners prefer WA applications over other social interactions or educational platforms.

WhatsApp is a tool that facilitates communication in different scenarios, including academic ones, in which teachers and learners have tried to profit from its use to benefit from the remote educational processes' development. In this sense, Phineas and Jumbe (2021) conducted a study to determine the effect of WhatsApp's mobile technology on learners' conceptual understanding of Thermal Physics and establish its influence on learners' problem-solving skills. The authors found that using WhatsApp is favorable for learners' development of their conceptual understanding of the subject matter and their problem-solving skills. Additionally, the

authors stated that those benefits come from the collaborative use of the application.

Along the same line, a study by Ajayi and Olajide (2022) aimed to determine the effects of the WhatsApp Group Learning Platform on Senior Secondary School Students' learning outcomes in Science, Technology, and Mathematics in Nigeria. For such purpose, an experimental group received instruction through WhatsApp as a learning platform, while a control group studied through the traditional methods. The authors concluded that the students exposed to WhatsApp performed better, possibly because they were already familiar with interacting and communicating through this social media platform, equipping them with opportunities to build knowledge; their results suggest that using WhatsApp provides enough confidence for learners when working alone and cooperating with their colleagues. Suárez (2018) had related findings in her research, pointing out the importance of teaching students how to use WhatsApp for educational purposes, highlighting aspects such as planning, implementing, and setting up goals for WhatsApp lessons.

Alternatively, studies like Soluade and Ogunbiyi's (2020) intended to identify students' perception of using WhatsApp and determine the application's benefits for students who kept the role as pre-service teachers of Social Studies concluded that the facilities of exchanges with fellow practitioners, with WhatsApp, resulted satisfying for them. The authors stated that the pre-service teachers evidenced favorable perceptions regarding the application's implementation as a teaching tool in Social Studies.

METHODOLOGY

This qualitative research study based itself on analyzing events and situations (Denzin & Lincoln 2005) occurring during mathematics, arts, natural and social sciences classes in English in two public schools in Pereira. Researchers collected

information through a virtual questionnaire administered to eight pre-service teachers who were 8th-semester students in a bachelor's degree program in English Language Teaching in Pereira, each possessing B2 level in English, and selected following a convenience sampling (Merriam, 2009).

The data collection instruments included a virtual questionnaire and students' artifacts. Participants answered the questionnaire at the end of the second academic semester to reflect on their teaching experience using WhatsApp as their primary resource, which included closed and open-ended questions. The pre-service teachers delivered virtual English classes through WhatsApp to high school and middle school graders at two public schools in Pereira, Colombia, and they collected students' artifacts sent through the application, like tasks, assignments, and activities, which were later stored on a Google Drive folder.

For ethical considerations, researchers followed the parameters stated by Merriam (2009), particularly confidentiality, valid research design, and anonymity (See Appendix 1). Additionally, the virtual questionnaire underwent a piloting and

feedback process assisted by four professors for their expert judgment in revising, refining, or identifying issues concerning each question's clarity, coherence, and performance before sending it via email and WhatsApp to the participants. The researchers used Google Forms to gather the information and Excel to register, sort, and analyze data.

The data was gathered and coded into distinctive categories depending on their characteristics, allowing the sorting of new information into categories with shared commonalities and novelties requiring the creation of new categories, integrating "categories" and "properties" Glaser and Strauss (1967, cited in Paramo-Morales, 2015). Each category was labeled with a specific title summarizing the category's focus, allowing the integration of new information to the same group regarding their commonalities.

Each question has a specific code to aid the researchers in classifying and analyzing the information; the codes are synthesized in the following table according to common responses among the participants.

Table 1. Synthesis of the codes assigned.

Color used to codify	Categories	Properties
Blue	WhatsApp as a channel for interaction that enhances education.	<ul style="list-style-type: none"> -Interaction with students. - WhatsApp as a means of disseminating information. - Greater interaction and exchange of messages. - Increased participation through audio. -Participation in social networks. - Less visual interaction - more texts and voice messages. - Only in a face-to-face environment is it possible to promote interaction and exchange of experiences. - Limited interaction. - Participation through audio. - Inclusion and participation of parents.

		<ul style="list-style-type: none"> - Greater communication with students. - Use of WA as a reminder or to send important messages. - WA as a means to solve doubts. - Communication with parents. - WA has been limited to transmitting information and content. - Instant interaction.
Green	Students and teachers use WhatsApp to access content and material easily.	<ul style="list-style-type: none"> - Systematic delivery. - Extensive record-keeping capabilities. - Real-time responses. - Monitoring of weaknesses and strengths. - Personalized feedback. - Personalized and private delivery. - Monitoring of students' developmental progress. - Complete record of classes. - Quick responses
Purple	Downsides of connectivity regarding technological concerns.	<ul style="list-style-type: none"> - Not all students have smartphones. - Limited device capacity. - Difficulties connecting to the network. - Mobile devices can become a means of distraction. - Lack of connectivity, participation, and coverage. - Limited use of audiovisual material (data usage limits).
Pink	WhatsApp and its limitations.	<ul style="list-style-type: none"> - Students' lack of interest. - Students deleting messages. - Use of complex WA in lower grades. - The teacher's presence is the basis of education required for imitation and assimilation processes

Source: Own design.

RESULTS AND DISCUSSION

After synthesizing the participants' responses based on established properties, categories, and commonalities of their reactions, the researchers established codes to facilitate collected data interpretation. Eight colors were chosen, meaning

four categories were analyzed individually; the following chart contains a graphical explanation of how the codes function.

Table 2. Assigned codes for the interpretation of the data.

Category	Number of categories	Code
WhatsApp as a channel for interaction that enhances education	1	C1
Students and teachers use WhatsApp to easily access content and material	2	C2
Downsides of connectivity regarding technological concerns	3	C3
WhatsApp and its limitations	4	C4

Source: Own design.

It is relevant to mention that the virtual questionnaire did not record pre-service teachers' names or personal information, ensuring participants' privacy rights and anonymity. To classify the individual responses of the fifteen educators surveyed, the code PT (Pre-service Teacher) plus a corresponding number from one to fifteen refers to the exact responses provided by participants.

WhatsApp as a channel to encourage class interaction

After analyzing the data, researchers found that WhatsApp enhances interaction and communication among pre-service teachers and their students. In this study, pre-service teachers manifested difficulties communicating with students through video call platforms such as Google Meet and Zoom due to lack of connectivity; therefore, WhatsApp became the primary source for establishing interaction and facilitating classes. Most of the pre-service teachers' reactions were assertive according to their experiences, and researchers identified some commonalities concerning increases in students' interactions and participation during virtual classes using text and audio messages or videos. Additionally, pre-service teachers discovered WA's utility as a diffuser for relevant and immediate information. The following excerpts support WA's interactivity and are shown through codes reflecting the categories and participants they represent; thus, C and a number belong to a category presented in Table 2, and PT

and a number refer to a corresponding pre-service teacher. These codes identify which category and participant a particular excerpt belongs to; for instance, C1PT6 indicates Category 1 Pre-service Teacher 6.

C1PT6: "It was acceptable because the children connected at the time that the class started, and I could interact with them[...]"

C1PT10: "Greater interaction with students as it allowed exchanging direct messages."

C1PT4: "The students once motivated to participate in sessions, sent audio notes and videos to participate in the activities."

C1PT2: "Different tools such as video and camera can be implemented when assessing students' competencies."

The previous excerpts show that among the participants' responses, there is an increase in interaction among students and pre-service teachers. Since learners were periodically connected to the WA application for personal and educational purposes, sending direct messages meant a higher level of communication due to its immediacy. A higher interchange of messages throughout different formats (audio and video) led to a deeper immersion into the social media platform; immediacy and students' commitment were the main factors that guaranteed the classes' success.

C1PT10: "WhatsApp becomes an indispensable means for sending important messages and reminders for future classes"

C1PT12: "[...] Also, it is a good means to answer questions beyond a distance."

C1PT11: "WhatsApp was used as a means of disseminating information for students who did not have the necessary resources to access calls in Meet"

The data suggests that WhatsApp allows users to diffuse relevant information based on the needs of the communicative agents. In this situation, WA connected students with limited resources with the teacher, the rest of the class, and crucially, with the lesson content through video-conference applications such as Google Meet and Zoom; that is to say, activities done through those apps are adaptable to lighter formats and more accessible for students with less digital storage space and mobile data. Pre-service teachers also used WA as an alternative for aiding learners to solve their doubts regarding content, activities, and homework immediately. Using WA in conjunction with the pre-service teachers' disposition and time was critical in reaching the proposed goals in the courses they lead, corroborating Ishtiaq Khan *et al.* (2021) statement on the importance of the teacher's guidance for having positive results in a class mediated through WA.

The presented finding proposes that the WhatsApp application serves not only as a means to chat for leisure but also to interact and exchange relevant information about specific content, in this case, educational. Even if WA has been considered purely as a social media application, this finding illustrates the potential its functionality can bring to teaching and learning fields, including the diversity found at the moment where interactions happen. This result aligns with what Munir *et al.* (2021) and Guadamuz-Villalobos (2020) state on how learners can quickly

receive messages due to their instant exposure to the WA application, which somewhat guarantees frequent information updates for group members.

Students and teachers use of WhatsApp to easily access content and material

Considering the participants' perceptions of the study, the second finding arises from the aspects and data examined based on monitoring, recording, and immediacy. Responses regarding WhatsApp's implementation as an educational resource had a positive connotation, and some advantages were identified, particularly, that this application allows users to revise the content no matter the time or place, which increases immediacy for delivering assignments, activities and feedback, as well as allowing personalized comments in real-time. Pre-service teachers' responses also highlighted this application's vast potential to keep records of evidence from the classes, leading to better monitoring of students' strengths and weaknesses, and facilitating personalized storage options and feedback sessions. Finally, online environments can easily count on diverse alternatives to include videos, games, and dynamic activities through which explored contents could be approached in a more explicit and bearable way for learners. These excerpts, collected from the virtual questionnaire, are related to monitoring and immediacy:

C2PT2: "[...] students can re-review their work and material submitted by the teacher at any time, and teachers can review students' production."

C2PT1: "You could attend to the individual doubts of each student immediately and clarify every aspect."

C2PT15: "It was a very simple and direct medium, where essential information was shared effectively, and it was possible to briefly resolve the concerns presented."

The evidence indicates that including WA in educational purposes can benefit students and teachers regarding the permanent access to the contents and materials shared through the application; so even if people are in a place other than their home, they can use any available time to check their smartphone and find the information they are interested in. Thus, accessibility varies according to the application's dependence on other technological devices like computers or tablets and data consumption requirements. Contrarily, WhatsApp allows real-time answers, enabling the teacher to attend to individual requests and doubts, creating a better environment for the learning process. Participants also mentioned WhatsApp is effective and easy to use, facilitating the fulfillment of classes; its immediacy for sending and receiving messages and its simple interface meant less time spent waiting for a response, grading, and returning the products sent by the learners.

C2PT2: "Because the activities, mostly individual, come through a private channel that helps personalize the work done by the student."

C2PT1: "Materials delivery was done systematically, and you could keep track of it and assignment turn-ins."

C2PT5: "Because you could objectively have the complete record of all classes with each message of participation, you could better observe and analyze the development of each of your capabilities."

C2PT14: "Given the greater interaction with each student, it was possible to notice their strengths and weaknesses in each skill."

The answers provided by pre-service teachers indicate that because all materials related to classes are shared through the same and only channel, WhatsApp, everything is recorded centrally. This advantage guarantees constant access and availability of the resources exchanged between the

learners and the teacher. Moreover, since students' products or doubts can be sent through a private chat, the teacher can periodically monitor students' learning process, identify their capacities, and potentialize them. They could also pinpoint learners' strengths and weaknesses, be mindful of their student's performances, and offer them individual and specific feedback based on their mistakes, failures, and needs. Teaching and learning through this application can transform teaching itself into a more personalized practice, as Guadamuz-Villalobos (2020) states. This potential of having an individual approximation and accurate recording of each aspect of students' linguistic development underscores WhatsApp's functionalities and its offer to the educational field regarding virtual learning. These diverse alternatives and possibilities can be explored through the subsequent excerpts:

C2PT7: "The students are very visual, and this medium allowed them to use videos of songs and more so that they could learn. This is something complex to do in school since there is no video beam or speaker to do this exercise."

C2PT9: "[...] the great diversity of material that could be implemented or created by participation strategies driven by virtuality."

The finding previously analyzed evidence that WhatsApp's tools allow learners and teachers to revise the content shared through the application at any time or place. This finding aligns with the results presented by Suarez (2018), in which she states the positive opportunity that WhatsApp offers its users preservation and access to send information despite the time or space, suggesting that WA supplies a higher immediacy level, which considerably decreases time spent on solving individual doubts, grading, and providing personalized feedback because messages exchange happens in real-time through private chats. WhatsApp serves as a tool for proposing and correcting problems or tasks related to the contents being learned (Súarez, 2018), which

is supported by the same author when she mentions the instantaneousness WA provides in communication for educational purposes, assuring a safer and more particular environment for students to interact with the teacher. Thus, the present finding demonstrates that the inclusion of the WhatsApp application for educational purposes counts with the potential to increase and guarantee the learners' success in a second language due to its simple interface and immediacy of interactions.

This application enables a linguistic diagnosis of students' performances and knowledge (Suárez, 2018) through the specific record of the evidence and materials sent by the learners. The second data, then, suggests that implementing WA can also facilitate assessment, evaluation, and monitoring of each learner's process by identifying their weaknesses, potentializing their strengths, or improving their skills through the tasks and activities proposed because of the individual channel that WA provides for both, teachers and learners. Therefore, this finding suggests the possibility of increasing students' interest and commitment due to the simplicity of access to content and materials, as well as a more direct and personalized means to keep track of students' performance, which in the long-term WA would allow a detailed analysis of those aspects to be improved or preserved.

Downsides of connectivity regarding technological concerns

After analyzing the participants' responses in this research, the present finding contemplates the concerns pre-service teachers faced while teaching English during a virtual mediated modality using WhatsApp as the primary resource to facilitate classes, deliver assignments, and provide feedback. Students' lack of personal smartphones and mobile data usage caps were some of the aspects found among participants' perceptions. A key concern identified by some participants regarding using

WhatsApp in education was the lack of digital equity among students. Not all students have access to personal mobile devices or unlimited mobile data, which hindered students' ability to download or access materials provided by teachers. The upcoming excerpts illustrate this challenge:

C3PT9: "[...] The continued shutdowns of the internet networks and lack of technological resources."

C3PT11: "Not all students in public institutions have access to the internet and a smartphone or even a good signal to make calls."

C3PT5: "Limiting the use of audiovisual materials taking into account the Internet limit of students."

C3PT1: "Not all students had a stable connection to access all materials [...]"

C3PT15: "When sharing a video, you had to be careful with the megabytes and content duration [...]"

These excerpts from the study showcase pre-service teachers' concerns about instructing in a virtual environment where not all students can consistently attend and actively participate. Despite the prevalence of smartphones in Colombian households (at least one per home according to Forbes, 2021), only 56.5% have internet access. This digital divide highlights a challenge for virtual learning: students' reliance on guardians' or family members' time and device availability to complete assignments. Additionally, the data highlights another challenge: some students lack smartphones or have limited data plans that restrict downloading the materials needed for class. This limited connectivity pushed pre-service teachers to design their teaching aids considering students' network and device capabilities.

The preceding finding indicates that pre-service teachers had to deal with students' lack of mobile devices to attend virtual encounters. While Wijaya (2018) suggests smartphones are widely accessible, participants in this Colombian context indicated the opposite. Owning a smartphone isn't a universal reality for all learners. This lack of access forced teachers to be mindful of the materials they sent, considering limited data plans that restricted students' ability to download or watch videos. This concern aligns with Wijaya's (2018) findings of participants facing limitations due to weak internet connections. Even though WhatsApp offers potential for English language learning, implementing it effectively requires considering the limitations of the context to ensure optimal student development.

WhatsApp and its limitations

While analyzing participants' perceptions about using this media tool for didactic purposes, researchers found negative effects on implementing classes in a virtual environment. This finding revealed challenges that negatively impacted English classes implementation. Students' behavior and their use of the platform created limitations when delivering assignments and providing feedback. Several factors contributed to these difficulties; for example, students' lack of interest in the subject itself, younger students' struggles with using the application, requiring constant parental assistance, reduced interaction compared to a traditional classroom, hindering the learning processes of assimilation and imitation. The following excerpts support this finding:

C4PT10: "[...] Some students forget the groups or do not open them even when the state in class they are aware of this medium. In other cases, students delete messages and state they have not received assigned materials."

This excerpt suggests that some students may struggle to adapt to receiving English classes through WhatsApp; learners do not perceive it as a valuable tool for their English learning process. Pre-service teachers likely identified this due to student behavior towards assignments and materials, reflected in lower grades. This lack of student engagement might stem from viewing WhatsApp primarily as a social media app, not a learning platform. Consequently, students may not take their WhatsApp groups and learning activities seriously, hampering their learning process. Moreover, the following excerpts indicate challenges regarding the use of WP with primary school students.

C4PT7: "Using WhatsApp to teach kindergarten and first-grade children is a complex task requiring ongoing support from parents ."

C4PT7: "It is complex to receive tasks and answers from children quickly since parents are often working or have many responsibilities, they are not attentive to their children, making it difficult due to their age."

As stated previously, these statements emphasize that learners, especially young learners, need their guardian's constant support for learning and WhatsApp use in academic scenarios because they do not usually own or know how to use a personal electronic device. Moreover, this monitoring can be affected since it is not a priority for guardians to teach their children how to use this application as they do not have the time to fulfill this requirement.

C4PT4: "Education is characterized by having in front of a teacher who guides us in the process of acquisition or learning [...]"

Both students and pre-service teachers were experimenting with virtual modality classes through WhatsApp, which has become a multifunctional tool

allowing class implementation in groups and individually. However, as seen in the previous excerpt, this type of instruction is not well-valued. WP is considered an alternative to support the presence-based modality, which shows results and true impact on the learning and teaching process for most learners and pre-service teachers, but pre-service teachers considered that genuine teaching, particularly with primary school students, only takes place in a classroom.

While the study found positive results with WhatsApp, making teaching more didactic and focused, it also revealed limitations. Specifically, the application's autonomous use by students and the lack of teacher control over optimal platform use were concerns. This aligns with Cascales' (2020) notion that the use of WhatsApp is content that needs to be addressed in family schools. To ensure a smooth learning experience and achieve subject goals, greater guardian involvement in the dynamics of WhatsApp use is essential.

Additionally, shifting the perception of WhatsApp from a social media app to an academic support network requires time and experience for educational impact. Therefore, this finding is in alignment with Cascales' (2020) ideas. This author identifies challenges; for instance, some teachers doubt its pedagogical value, and students do not see its learning benefits. These obstacles, particularly for in-service teachers unprepared for curricular challenges with WhatsApp, ultimately hinder both the teaching and the learning process.

provides them with an easy-to-use interface and channel for communication and interaction, through which doubts arising during class are almost immediately solved (Munir *et al.*, 2021). This application allows a successful exchange of relevant information due to the diversity of formats available to deliver messages among teachers and students, which directly boosts the dynamics and resources implemented. Data evidences WA's potential for availability of contents and materials without location or time restrictions. Therefore, it allows teachers to closely monitor the learners' performance to facilitate a feedback process that could benefit both parties since the application saves announcements, assignments, explanations, and corrections. In that way, students and teachers can have all the resources available.

Secondly, the results underscore the significant impact of the WhatsApp application on the students' sense of autonomy. The absence of a face-to-face environment during the pandemic allowed pre-service teachers to learn about this mobile application's potential to give students independence over the formative procedure, reflected in the students' option to work at their own pace within the established deadlines, as well as a greater sense of ownership and responsibility towards their second language learning process. Due to learners' active role in virtual scenarios, several improvements in their confidence appear, including their desire to participate, contribute, and express ideas because they feel more comfortable behind a mobile device. Learning involves an emotional factor and relies on learners' and teachers' disposition, so the opportunity WhatsApp offers for taking classes in users' preferred spaces and message formats ensures their tranquility. This finding suggests that a practical and comfortable means of learning can transform students' initiative values into positive experiences.

CONCLUSIONS

After analyzing pre-service teachers' perceptions concerning the implementation of WhatsApp lessons, researchers concluded there is an effective accommodation process in which students demonstrate their commitment and willingness for language learning (Ishtiaq Khan *et al.*, 2021); WA

Regarding the study's limitations, the pandemic revealed the socio-economic inequalities students in Colombian public institutions face. It was difficult for pre-service teachers to facilitate their classes through a synchronous session due to students' lack of connectivity and internet-capable devices at their homes. Using smartphones and WhatsApp with students was easy; however, some did not own a device and had to use their parents'. Nevertheless, pre-service teachers adapted their classes to a lighter format that enabled learners to access lessons that were well-planned and accepted by the learners. (Mulyono *et al.*, 2021).

Further research should focus on WhatsApp's use in hybrid learning environments where students take WhatsApp lessons that complement their face-to-face learning sessions. Research that enables an analysis of the interactivity, autonomy, and language competence levels students might achieve with the application.

DECLARATION OF CONFLICT OF INTEREST

Los autores declaran que, durante la realización de esta investigación y la redacción del artículo, no han influido intereses personales ni externos a su voluntad. Además, aseguran que no se han involucrado en ninguna mala conducta y han mantenido los estándares habituales y adecuados para la investigación. Por lo tanto, declaran que no existe ningún conflicto de interés.

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APPENDICES

Appendix 1. Ethical Considerations

The following chapter describes the different considerations regarding ethical matters to ensure the well-being of the project's participants. Because they belong to public institutions (public schools and the UTP), providing them with the necessary information about the project and their roles is unavoidable to guarantee their integrity and safety during the investigation. Thus, it is decisive to incorporate adequate measures to reduce negative circumstances that could deviate the study's development and results as much as possible. This section explores some ethical considerations recommended by the nonprofit organization Committee on Publication Ethics (COPE): ensuring a valid research design, obtaining voluntary consent and participation, and guaranteeing confidentiality and anonymity.

Assure a valid research design

The questionnaire design must incorporate explicit questions that are intelligible for participants to encourage the achievement of the research objectives and to avoid supplementary data that could alter the project, so results and conclusions must be straightforwardly related to the data analysis methodology chosen in advance.

Obtain voluntary consent and participation

Since the present research involves pre-service teachers' disposition to obtain their perceptions regarding WhatsApp's implementation as an educational means for teaching English, it is fundamental to count on their volition to participate and share their experiences; thus, the primary researcher will be in charge of approaching pre-service teachers and providing them with relevant information about the study's implementation and their roles once they voluntarily accept to participate. Hence considerably decreasing possible anxieties, tensions, or insecurities.

Guarantee confidentiality and anonymity

Because this research involves pre-service teachers' perceptions, personal experiences, and performance evaluations, protecting participants' identities is crucial to prevent negative judgments and misinterpretation of collected information. In that sense, the idea is to encourage their freedom and tranquility to promote honesty in their responses. Thus, at the beginning of the questionnaire, all participants can accept or refuse the confidentiality and anonymity terms to proceed with the survey for academic purposes.

Avoid coercion and manipulation

Because the present study is based on the pre-service teachers' perceptions regarding the implementation of WhatsApp as an educational resource, it is necessary not to intervene or manipulate the virtual questionnaire participants will fill out and their corresponding answers. In that sense, all research project members must be conscious of their roles to decrease or avoid any inconveniences regarding inappropriate use of materials. Thus, opinions or comments from external entities are not allowed since they might compromise reliability, deviating from the project's purpose.

Conducting a research project involving pre-service teachers' participation requires the primary researcher and co-researchers to determine ethical considerations before observation and data collection to protect the participants in terms of identity and confidentiality. Moreover, it is imperative to ascertain if participants are willing to cooperate in the project to obtain reliable results that can meaningfully impact education. Therefore, these considerations will ensure participants have a safe space to be critical and honest regarding their learning and teaching experiences.