Article

WhatsApp as a University Tutoring Resource

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Abstract: Tutoring, as a process of accompaniment of university students, has among its purposes identification of and reflection on the various difficulties that can interfere in the development of student competencies. To the same end, the present research explores the possibility of using WhatsApp as a tutoring resource in universities, with an emphasis on identifying and reflecting on the academic, personal, and family problems of students. This case study uses a quasi-experimental approach with a treatment group and a control group intentionally selected at the Escuela Profesional de Educación Secundaria de la Universidad Nacional del Altiplano de Puno, Peru, during the first semester of the 2020 academic year. Data were collected using semi-structured interview guides and individual tutoring cards. The results show that this technological resource improved the university tutoring service among the students in the experimental group. It proved more flexible and attractive to students, who were motivated to externalize and reflect on their personal, family, and academic difficulties and showed increased openness to receiving help in problem solving them. On the other hand, student participation was less active in the control group. These findings affirm that WhatsApp is a resource that can allow more spontaneous and friendly communication between tutors and students, creating a context conducive to achieving the objectives of university tutoring.

Keywords: WhatsApp; social networks; interpersonal relationships; higher education; digital communication

1. Introduction

Currently, social networks and instant messaging applications have been proven to support educational processes, though not as substitutes for face-to-face interaction [1]. ICTs can provoke emotions and feelings, which implies the channeling of emotions when interacting with these tools [2].

Today, WhatsApp is one of the most popular instant messaging applications in the world. According to Statista [3] data, monthly active users of WhatsApp will number 2 billion in 2021, followed by Facebook Messenger with 1.3 billion users and WeChat with 1.2 billion users. WhatsApp has a record of nearly one billion messages sent in a single day. In addition, the platform allows other functions, such as making calls, sending voice messages, and sending multimedia content such as images and videos, among others.

During the COVID-19 pandemic [4], 15 billion minutes of voice and video calls per day were recorded [5]. As for the users who use the platform, data indicate that most of them are young people between 18 and 24 years old. In the United States alone this sector represents 44% of WhatsApp users, followed by approximately 30% representing users between the ages of 25 and 29 and 26% between the ages of 30 and 49. Finally, seniors over the age of 65 account for 7% [6].

In this sense, WhatsApp is a tool that can be used in different fields of application both for its availability on various platforms and its reach to different types of users.

WhatsApp has a high level of acceptance in online learning thanks to its practicality, the availability of support, motivation, and continuous connection with friends, as well as the possibilities it offers students in terms of exchanging information and participating in learning discussions [7].

In the field of education, it can help to promote participation in the classroom and encourage students to build knowledge. Activities such as sharing educational content in various formats such as text, video, audio, and web resources are among the advantages offered by this tool. In addition to being a tool available 24 h a day, students can establish student-to-student or teacher-to-student communication, which promotes the generation of discussions on educational topics in context.

WhatsApp in the educational environment can represent an area of opportunity in the teaching–learning process, and with the right strategies can be adapted to the contexts of each student and teacher for the promotion of research, knowledge construction, student self-learning, and collaboration.

Previous studies have shown that WhatsApp offers diverse educational possibilities; for example, WhatsApp is known to be a space of opportunity that acts as a conduit to help African schoolchildren succeed in school [8]. During the COVID-19 pandemic, it was evidenced that WhatsApp application can increase English language learning during summer intensive courses [9] and that social networks and applications such as WhatsApp can serve as communication and teaching tools in developing countries [10].

The general objective of this work is to explore the possibility of using WhatsApp as a tutoring resource at the Universidad Nacional del Altiplano de Puno, Peru. In addition, particular objectives we propose to identify through this tool are recognition and reflection on academic, personal, and family difficulties of students and explaining how the use of this technological resource can help to improve interaction between tutors and the tutored.

This work is composed of seven sections. The background Section 2 delves into the topic of university tutoring through the use of WhatsApp. Works in the literature concerning the use of WhatsApp as a tool for teaching and learning are presented in Section 3. Section 4 presents a case study with students of the Professional School of Secondary Education of the National University of the Altiplano of Puno, Peru, and Section 5 presents the results. Section 6 discusses the obtained results in terms of university tutoring, and finally, Section 7 presents our conclusions and future work.

2. Background

2.1. University Tutoring

In the model of university training by competencies assumed by Peruvian universities, the tutoring system is a fundamental aspect that provides help, guidance, and counseling to students in order to achieve academic success [11]. University tutoring helps in the personalization of teaching and the integral development of students, focusing on preventing desertion and encouraging the practice of transversal competencies [12], leading to a strategy that allows individualized attention in a heterogeneous context [13].

The tutoring system at Universidad Nacional del Altiplano de Puno aims to guide and accompany students in the academic and personal aspects of their professional training process with an orientation towards achieving quality learning, reduce=ing student dropouts, and contributing to their timely graduation. The purposes of tutoring are referred to as guiding the student's learning process (general and specialty competencies) and guiding their personal development (soft skills).

This last idea is built on the proposal of the three-dimensional approach to tutoring, that is, personal, academic, and professional [14] and the decision taken by the Universidad Nacional del Altiplano de Puno to modify this three-dimensionality, analyzing the academic, personal, and family components.

Tutoring is an effective strategy to improve academic performance, although it requires good tutors, an adequate relationship with students, and a favorable environment [15]. Tutoring refers to both the academic field and other aspects, such as personal, family,

social, professional, and administrative matters [16], turning the tutorial action into a process of academic, personal, and professional counseling that responds to diverse student needs [17,18].

The dimensions addressed in the study which are considered in the university tutoring system of the UNAP are derived from these positions.

University tutoring is performed by professors as a function inherent to the exercise of their academic and research activities [19,20]. However, tutors do not always use the best strategies to approach their students and help them reflect on difficulties that may be interfering with their academic performance. It is this last aspect that is the foundation of this research. Tutoring comprises interaction processes between tutor and students based on mutual knowledge of their specific problems, needs, and interests [21]. Currently, three complementary and non-exclusive modalities of university tutoring can be distinguished, namely, individual or personal tutoring, group tutoring, and the newest, virtual tutoring [22].

In order to realize these tutoring modalities, it is necessary to create an environment that allows close, systematic, and permanent accompaniment to support the student and facilitate the process of constructing different types of learning, cognitive, affective, socio-cultural, and existential [21], including tye necessary use of mechanisms that allow easy and timely communication through information and communication technologies (ICT) and the advent of applications for smartphones, which offer effortless communication [23].

2.2. WhatsApp and University Tutoring

Mobile phones, social networks, and instant messaging applications such as WhatsApp are tools that allow immediate communication, create discussion environments, and allow for sharing files to facilitate personalized learning [24–26], all of which are perfectly adapted to a virtual tutoring system.

WhatsApp is one of the most common and widely accepted tools for communication and collaboration [23]; it is adapted to mobile use, allowing convenient and practical communication to the point of replacing phone calls in youth communication [27]. Therefore, WhatsApp has recently been proposed as one of the most popular applications used by students [28].

The pedagogical potential of WhatsApp has been addressed in several different aspects, including formal, informal, face-to-face, and distance education [29], and represents an innovative and effective resource for achieving beneficial communication [13,30]. WhatsApp can be used as a productive and viable pedagogical tool for creating a participatory learning environment [31], and has even greater pedagogical use in the university [32]. Students can use it to create instant messaging groups to keep up to date and support each other academically [33], as WhatsApp motivates students and professors and encourages them to share information [34].

Additionally, WhatsApp creates a more individualized relationship with the teacher, motivates students to learn, and generates cooperation and participation even from the shyest students, allowing them to develop communication [35], which is made more expressive and varied by the use of various textual and non-textual elements such as images, videos, audio, and stickers [36]. Likewise, students communicate more through WhatsApp, and do so with enthusiasm and a feeling of freedom [37], constituting a useful tool for virtual tutoring [38].

WhatsApp has proven useful for both tutors and students, who claim that its usefulness lies in its power for efficient communication, both synchronous and asynchronous [39].

Likewise, WhatsApp is an application that allows teachers to provide students with timely support, guidance, and advice, guaranteeing quality contact and a "virtual closeness" that counteracts the social distancing implemented worldwide [11]

The use of WhatsApp as a tool for the development of university guidance and tutoring processes has proven to be effective, as students ae able to access any type of information anywhere and at any time [40].

Although research on this topic is scarce, the results on the use of WhatsApp as a tutoring support resource show several advantages: it generates individualized interaction with students and a positive view of communicative competence that a tutor should have; it allows students to engage in consultations to perfect their academic work, and generates a group class feeling. However, disadvantages have been identified as well, the main ones being the students' idea that the tutor should be available to them every day and at any time and a preference for using individual chat and not the groups created for consultations [29,41]. These aspects are essential to the consideration of WhatsApp as a resource that generates the appropriate context to carry out university tutoring.

3. Related Work

WhatsApp is a messaging tool that allows for sharing information with other users, forming groups of interest, and coordinating these groups, among other functions. This makes WhatsApp a tool that can be used for educational purposes as part of the various existing teaching–learning processes. In the literature, there are several initiatives in which WhatsApp is the base tool for knowledge acquisition strategies.

In the last five years, WhatsApp has been used as a tutoring support tool thanks to the ease with which is can be adapted to the educational context through intertwined student–teacher interactions. The use of technology as an educational resource in educational institutions has allowed students to extend the range of possibilities in their learning experience. Authors such as [29] have emphasized new technologies, as today's students are digital natives and these tools are an essential part of both teaching and study as a means of simple generation of teaching–learning. An example of tutoring using WhatsApp is the case of [42,43], in which doctors and students established a communication mechanism within the Problem Based Learning (PBL) approach. The findings of this work indicate that WhatsApp can be a feasible study mechanism for study groups. In the case of [44], the authors focused on the use of methodologies for the integration of qualitative methods in order to learn how tutors adapt to teaching in groups. In both of these papers, the authors intended to establish effective tutoring styles through digital tools.

Other works such as those of [45–47] are oriented to the use of WhatsApp as a tool that can be incorporated into educational processes. These papers explore the possible success effects on students when using a technological environment compared to a traditional learning environment. In [48], the authors present a study using a sample of 166 law students in which teacher–student interactions through the use of WhatsApp were analyzed. The objective of this study was to determine the various mechanisms of interaction between students and teachers through a technology tool that teachers can use to monitor different academic tasks, coordinate in real-time, and analyze the interactions of students that affect the learning process. The authors of [49] presented a study with the objective of analyzing the potential of WhatsApp as a tool to promote health education aimed at reducing breast cancer by using WhatsApp groups to help women acquire the necessary knowledge for early identification of cancer. The results identified an improvement in women's knowledge on issues related to myths and truths about breast cancer.

In other areas of medicine, [50] focused on understanding how WhatsApp can result in a positive academic impact for veterinary students.

As can be seen, these works help to change the paradigm of education through the use of technology, promoting participation, freedom of dialogue, and the search for new resources and educational strategies to improve the quality of education.

4. Case Study

4.1. Materials and Methods

The case design was quasi-experimental, with a pre-and post-interview focused on a sample chosen for convenience in which there was no randomization in the choice of participants in the two groups. The goups were, first, the experimental group, which used

WhatsApp for tutoring, and second, the control group, which did not. The analysis was conducted through a mixed research approach.

4.2. Participants

The research was carried out during the first semester of the 2020 academic year, a semester that was conducted entirely virtually. The study population consisted of the students of the Professional School of Secondary Education of the Universidad Nacional del Altiplano de Puno, Peru (UNAP), numbering 1162 students in total.

The sample was purposive by convenience, considering as a selection criterion that the tutor should have an academic load of at least one subject in the 2020-I semester with that group. Under this criterion, 28 students were considered for the experimental group (IV semester) and 30 for the control group (III semester), drawn from the schools of Language, Literature, Psychology, and Philosophy. It should be noted that the study was carried out as a pilot educational experience at the university, and as such the selection of the purposive sample was considered acceptable.

4.3. Variables and Instruments

Two research variables were used. The first, WhatsApp, was considered as an independent variable, the use of which in the experimental treatment involved four resources inherent to the application: messages (text and voice, for synchronous and asynchronous communication), calls (for synchronous communication), attachments (Word, pdf, ppt, images, music, and videos for asynchronous activities), and emojis and stickers (supplementing text messages or replacing them in synchronous and asynchronous communication). These were used by the tutors according to their relevance for each activity and by the students according to their preference. The second variable, university tutoring, was considered as a dependent variable oriented towards identification and reflection on academic, personal, and family difficulties that could affect students' performance as related to specific aspects considered in the university tutoring system of the UNAP (Figure A1).

Data were collected using interviews, with semi-structured interview guides and individual tutoring forms as instruments. The interviews had the following two purposes:

- Generally, aiming to collect information on the academic, personal, and family difficulties that students faced which could negatively affect their development in the university environment; this was conducted before and after the experiment with the members of both the experimental and control groups.
- Specifically, oriented towards determining the perceptions of students concerning the use of WhatsApp as a virtual university tutoring resource; in this case, the interview was only applied after the experiment with the students of the experimental group.

The first semi-structured interview guide had nine guiding questions oriented towards identifying and addressing the academic, personal, and family problems of the students. This was accompanied by the individual tutoring form, an official instrument approved by the Academic Vice-Rectorate of the UNAP (see Figure A1 of the Appendix A) to record the difficulties that students might have, promote reflection, and aid in deciding on what help might be needed. The second semi-structured interview guide consisted of three questions related to the usefulness of WhatsApp as a university tutoring resource.

Both interview guides were evaluated by experts in psychology and tutoring at UNAP in order to ensure their validity. The results showed an Aiken's V coefficient of 0.88 for the first interview guide and 0.75 for the second, indicating the validity of the study instruments.

4.4. Procedure

We began with entrance interviews with the members of both groups, which were conducted through phone calls and video calls. The entrance interview aimed to identify academic, personal, and family problems which could affect the students' university

performance. Subsequently, a protocol was approved for the use of WhatsApp as a resource for academic, personal, and family tutoring during the semester in the experimental group, which contained guidelines about the purpose, activities, and rules for using this application. Figure 1 shows examples of tutoring through WhatsApp.
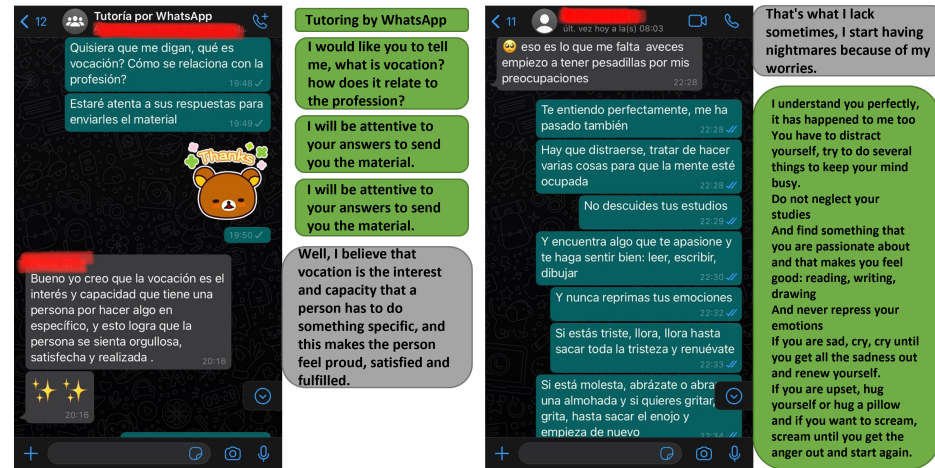
Figure 1. Examples of tutoring carried out through WhatsApp.

Informed consent was requested from all of the students, including the assurance that their identities would be handled confidentially, with 100% of them expressing agreement. Fourteen activities were carried out, always initiated by the tutor in the WhatsApp group, each one comprising a dynamizing and motivating element (six video, six audio, and two image activities were used), accompanied by questions and reflection activities to encourage comments on each topic addressed. Individual or group chat was used to address individual and group tutoring through WhatsApp. The topics were directly related to the problems identified in the entrance interviews and were modified according to the context. Each activity lasted one week, with the space for comments able to be extended until students felt comfortable sharing their experiences or required support.

At the end of the experiment, an exit interview was applied for both groups in order to take stock of how academic, personal, and family problems were addressed during the semester and aided by the university tutoring system. Students in the experimental group were interviewed to learn about their experiences concerning the use of WhatsApp as a university tutoring resource. It should be emphasized that in the control group the same topics were addressed and programmed in a work plan; the difference was that the activities were oriented towards setting up consultations or requesting support from the tutor and responding through telephone calls or by e-mail. The specific procedure is presented below in Figure 2.

The information collected in the entrance and exit interviews was processed quantitatively (percentages per item) and qualitatively (open-ended responses). To obtain the quantitative data, the students' responses were concentrated in individual tutoring cards, which made it possible to record and count the percentage of students in both the experimental group and in the control group who identified and reflected on their academic, personal, and family problems, establishing a comparison before and after the experimental treatment. Likewise, it was possible to establish a flow of reactions to the tutoring activities encouraged through the use of WhatsApp in the experimental group by recording the number of responses per week to the reflection questions, the number of individual conversations, and the number of group conversations.

The qualitative responses were studied from the point of view of discourse analysis, with the creation of categories based on the monitoring of dimensions that already exist for tutoring at UNAP, allowing us to understand the main academic, personal, and family problems affecting the lives of university students and to encourage reflection on them. Additionally, the final interview with the experimental group allowed us to capture the

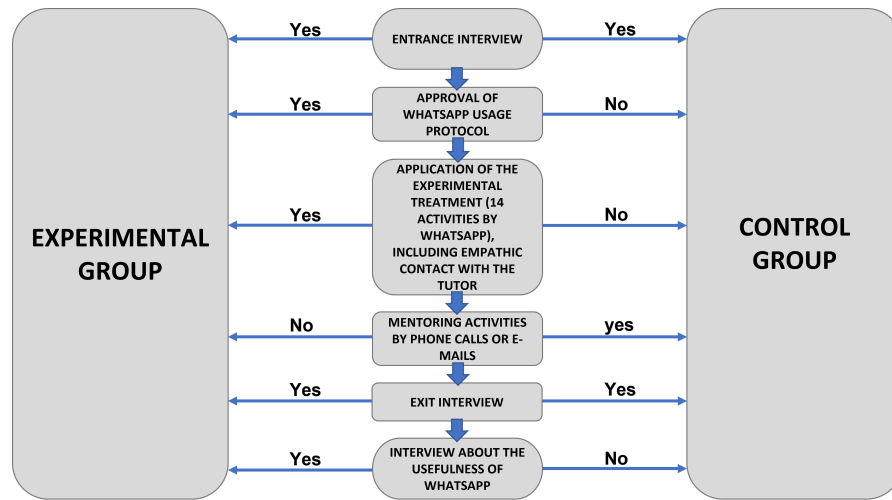perceptions of students regarding the usefulness of WhatsApp in the relationships between tutors and tutored.

Figure 2. Experimental procedure.

5. Results

5.1. WhatsApp and University Tutoring

The obtained results show that WhatsApp helps to achieve the objectives of university tutoring, allowing the identification of academic, personal, and family problems of students in order to offer them the necessary support under permanent accompaniment in a way that does not interfere in their studies. Figure 3 shows a comparative approach to these problems through university tutoring in the experimental and control groups before and after the experimental treatment.

Before the experimental treatment, an average of 10% of the students in both groups allowed themselves to discuss their academic, personal, and family problems with their tutor, with no marked differences between them. After the application of WhatsApp as a university tutoring resource, 26% of the students in the experimental group on average managed to identify, reflect on, and try to solve their academic, personal, and family problems with the help of their tutors, creating spaces for reflection in order to prevent these difficulties from interfering in their development as university students. There was a difference of 16% compared to the input evaluation. In the control group, the difference between the entrance evaluation and the exit evaluation was only 4%, with no change in the treatment of students' problems through tutoring.
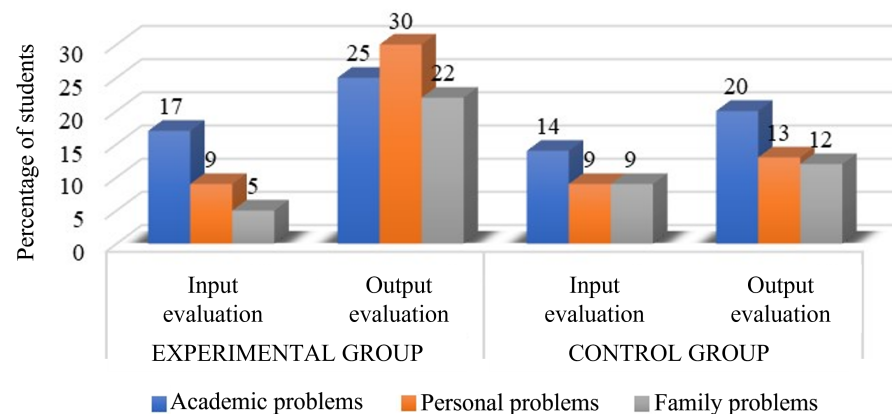

Figure 3. Comparative graph showing the students' reflection on their problems through university tutoring in the experimental and control groups before and after the experimental treatment.

5.2. Use of WhatsApp for Identification of and Reflection on Academic Problems

In the experimental group, the treatment of students' academic problems was the aspect that showed the most minimal progress; between the input evaluation and the output evaluation, there was only a difference of 8%, from 17% to 25%. Nonetheless, this result is positive, indicating that the problems presented are those that occur frequently to students and that they have no qualms in sharing them with their tutors to try to overcome them. Among all the features evaluated in this dimension, there are two aspects in which WhatsApp tutoring showed the best results:

- Interest and motivation to study, for which the approach increased from 25% to 50%, indicating that this group of students could not find clear reasons to study and required accompaniment and the implementation of activities that promote autonomous and conscious learning.
- Vocational instruction and identification with a career, which went from being addressed by 14% of students to being adressed by 29% in the experimental group, demonstrating that using WhatsApp for tutoring can generate reflection in students and help them to strengthen these aspects. Several of the students' answers are transcribed in Table 1.

Table 1. Students' expressions when addressing some academic, personal, and family difficulties (Note: Comments transcribed from WhatsApp).

Aspect	Subject Matter	Comments
Academic	Interest and motivation to study	E.14. I do things because I have to do them and that's it; but I don't do it with much enthusiasm, since I don't know if it is what I want. E.16. I have a goal and that leads me to study and make an effort because I want to get ahead. That's what you should do, classmates, identify your purposes and everything will be easier to understand.
	Vocation and career identification	E.13. Teaching is not my forte; but I believe that the career I study can have other missions. E.23. The problem with vocation is that in the society in which we live it is not valued…it can be observed that an individual with influence is worth more than an individual with knowledge and vocation of service…this discourages.
Personal	Personal goals and aspirations in a life plan	E.1. I have many projects and many goals; but I get discouraged when I see them disappear without being achieved…I believe that building a life project should begin in childhood, so that we don't get lost along the way. E.20. Establishing a life project is a serious thing, I think I should formalize this aspect; but I am afraid of being disappointed when I see that my goals are very far away.
	Autonomy and decision making	E.16. Most of the time, I take my own…but it happens to me that sometimes I find a very difficult situation and I get paralyzed, that's the problem (Emoji of an embarrassed and smiling face). E.17. I am afraid to make my own decisions, I always look for the approval of others before deciding something… I am fearful and I always need someone to advise me.
	Continuous stress	E.9. There are too many activities, I get headaches almost every day and I get desperate because I can't accomplish all my tasks. E.5. Sometimes I fall into despair, especially when things do not go as I plan; but today I understood that we must take things calmly. Thank you for the reflection.

Table 1. *Cont.*

Family	Conflicts in family relationships	E.11. I feel that my parents do not understand me, they do not agree with me and then we argue a lot and that affects me. E.17. Everyone looks for their own personal wellbeing and we forget that we are a family…sometimes I feel alone.
	Loss of a family member	E.3. I think I will never accept it, it hurts too much to know that I will never hug her again (Emoji of sadness and crying). E.17. I never thought it could happen to me, I never thought about death and now I see it so close, I don't like it, I don't want it… it took away almost all my will to live (Emoji of crying).

5.3. WhatsApp in the Identification and Reflection on Personal Problems

Of the three components of university tutoring conducted through WhatsApp, the aspect that had the best results was personal tutoring, which sought to identify and address the personal problems of students in order to help them find viable solutions and prevent these difficulties from interfering with their academic performance. Between the input evaluation and the output evaluation, there was a difference of 21%, from 9% to 30%, demonstrating that WhatsApp is a resource that can motivate students to externalize their personal problems, address them, and try to solve them with the help of their tutors and the services provided by the university. Among the traits evaluated in this personal dimension, three aspects stand out:

- The limitations that students have in establishing personal goals and aspirations in a life project, where their approach increased by 54%, from 7% to 61%, showing the need that students have to share their difficulties through a medium that is easy and convenient to use, such as WhatsApp.
- Fifficulties in autonomy and decision making, a trait where treatment increased by 42%, from just 4% to 46%, showing students' interest in addressing this issue and finding strategies that allow them to overcome it.
- The presence of continuous stress that leads students to an unstable and fragile emotional state. For this last trait, there was a difference of 39% between the input evaluation and the output evaluation, showing the need that students have to express the discomfort generated by various stressors. Several of the students' comments are transcribed in Table 1.

5.4. WhatsApp in the Identification of and Reflection on Family Problems

Family problems that could affect the academic performance of students were among the issues identified and reflected upon, increasing this aspect by 17%, from 7% in the entrance evaluation to 22% in the exit evaluation. This shows that tutoring via WhatsApp is a good strategy to motivate students to address their family concerns and to try to find a solution. Within this item of tutoring, two aspects were the most outstanding:

- The identification of conflicts in family relationships, where treatment increased by 43%, from 14% before the treatment to 57% after the treatment. This evidences students' need to share their family difficulties through a medium that provides confidence and makes them feel comfortable.
- With respect to the loss of a family member, the treatment of this trait increased by 25%, from 7% in the entrance evaluation to 32% in the exit evaluation. Several comments are transcribed in Table 1.

5.5. WhatsApp in Interactions between Tutors and Tutored

The communication processes in the experimental group using WhatsApp became more fluid from the fourth week onwards, when sharing problems with the tutor became a way for the students to generate empathy and promote mutual assistance and help among the members of the group, creating greater affinity by showing that the tutor might

have the same problems as the students, which promoted more expressive communication using the various resources of WhatsApp. Thus, reflection on the students' problems increased in individual and group conversations via WhatsApp (Figure 4), mainly evidencing the increase in individual conversations, reaching thirteen during weeks 11 and 12 of the experiment, when in the first weeks there were only three on average. In addition, group conversations remained constant between one or two per week, which was positive, as it helped to generate companionship and empathy among the group members. On the other hand, the answers to the reflection questions remained constant, with an average of twenty students answering them each week.

As mentioned, the use of WhatsApp as a university tutoring resource has been very useful in accompanying students who require help, allowing the establishment of affectionate and friendly ties between tutor and tutored, which is essential to generating support strategies in the academic, personal, and family development of students. This result is supported by the students' comments on their experience with the use of this instant messaging application, which are transcribed in Table 2.

Table 2. Comments on the use of WhatsApp as a university tutoring resource (Note: exit interviews with the experimental group).

| Question Raised	Comments
Has this type of tutoring helped you to address your problems?	E.16. Not to overcome them, but to cope with them, to treat them as something normal that happens to many people and that I should not feel bad for having them. E.11. Some, others not; but at least it has made me feel accompanied. In addition, the strategies used were very reflective and made me feel that all human beings have problems and that they should not interfere in my development as a future professional. E.23. It has helped me to recognize many weaknesses that I had and did not want to accept, the reflections that the teacher sent us were very interesting and made me think about how important it is to love and value myself.
Why tell your problems or concerns via WhatsApp?	E.15. Since I formed the WhatsApp group, I felt comfortable with the tutoring system, it seemed to me something informal and it adapted to me; then I understood that within that informality there were clear objectives...I don't feel comfortable talking to her looking at her face, I feel that she is going to criticize me, but through WhatsApp I feel freer. We use WhatsApp for almost all the courses and doing it for tutoring is something comfortable. E.8. Because I feel more like my friend through this medium, I can say things that I would not say in a direct conversation, face to face. ... I was encouraged to tell her about my fears and my difficulties in putting together my life project. E.1. Because I can do it when I feel the need to talk to someone, using WhatsApp helps me to find support when I need it. Previous semesters it was difficult to make an appointment with my tutor and if I had problems. I had to wait until that day to tell him about my difficulties; instead with WhatsApp it is easier to find help and feel that there is someone willing to listen to you.
How did you feel interacting with your tutor through WhatsApp?	E.6. Super comfortable, in my tutor I found a friend, I had already worked the previous semester with her; we would set a date for the tutoring session and few times later we met again, our schedules did not coincide and we did not find the time to talk, it was a colder relationship; on the other hand, through WhatsApp it is better. E.14. I felt that she was a very special friend, whom I had to treat with respect, but with trust. The relationship became stronger because I could always contact her. At the beginning I was a little embarrassed to tell her something; but then I got used to it and it provoked me to tell her many things. E.10. Comfortable, because I use WhatsApp for almost everything, so it was perfect that I also use it to contact and talk to my tutor.
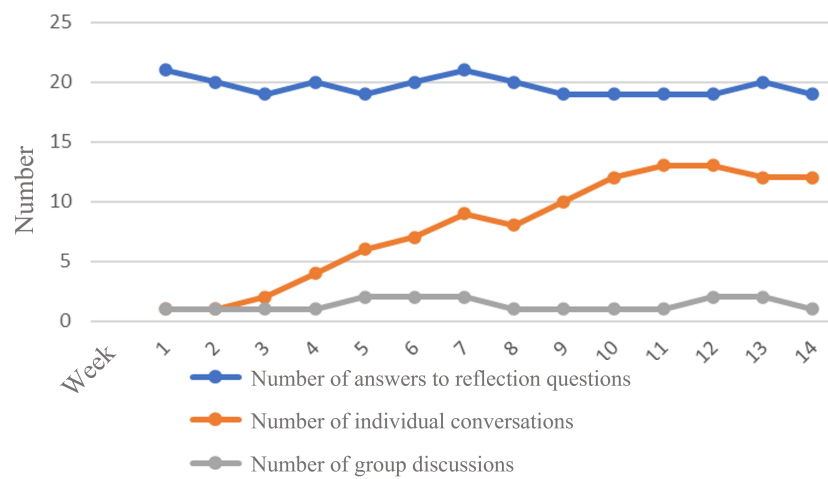
Figure 4. Graph showing the flow of reactions to tutoring activities in the experimental group.

5.6. Statistical Tests

This section presents a description of our statistical analysis using SPSS software [51]. In the experimental analysis group, for the three dimensions according to the Shapiro–Wilk test [52,53] the data are homogenized, that is, the perceptions are relatively the same in all cases. The same is true of the control group, except that in the personal dimension there is an approximation of non-normality, that is, the dispersion increases.

Student's *t*-test [54] was used to analyze the academic and family dimensions, and the Mann–Whitney test was used for the personal dimension.

The interpretation of the significance obtained here assumes that there are no differences in either group, that is, for the values corresponding to the before and after peiods for the academic aspect the perceptions are equal for Student's *t*-test, as the *p*-value is greater than 5% (see Table 3).

Table 3. Student's *t*-test: independent samples.

		Levene's Test for Equality of Variances		*t*-Test for Equality of Means				95% Confidence Interval of the Difference	
		F	Sig.	*t*	gl	Sig. (Bilateral)	Mean Difference	Standard Error Difference	Lower	Upper
expac_	Equal variances are assumed	0.351	0.560	−1.377	20	0.184	−2.27273	1.64994	−5.71445	1.16899
before	Equal variances are not assumed			−1.377	18,838	0.185	−2.27273	1.64994	−5.72811	1.18265

For the Mann–Whitney U-test [55] (see Table 4), the significance is less than 5%, meaning that there are differences between before and after, i.e., the personal aspect increased in difference as shown by the statistical test (see Figure 5).

Table 4. Summary of Mann–Whitney U-test for independent samples.

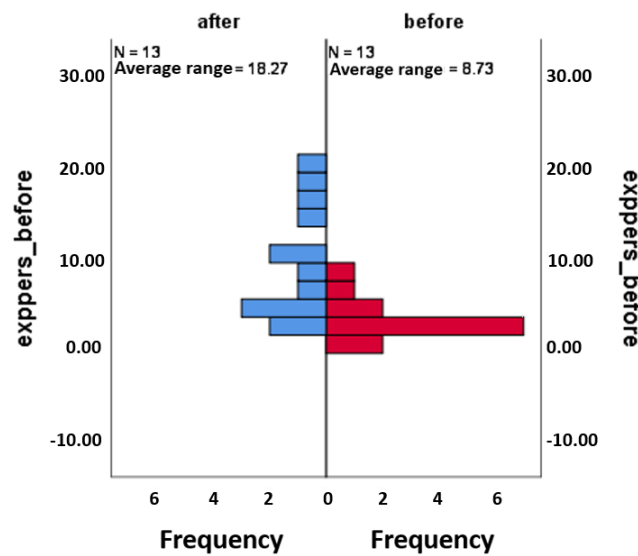| N Total	26
Mann-Whitney U	146.500
Wilcoxon W	237.500
Test statistic	146.500
Standard error	19.329
Standardized test statistic	3.208
Asymptotic sig. (bilateral test)	0.001
Exact sig. (bilateral test)	0.001

Figure 5. Mann–Whitney U-test: values corresponding to before and after for the academic aspect.

For the comparative test (see Table 5), these results allow us to conclude that, statistically speaking, it is evident that the academic and family aspects are similar, that is to say, that there is no variation between before and after from the inferential test. In the case of the personal aspect the difference is evident, allowing us to see the importance of using WhatsApp in tutoring.

Table 5. Summary of hypothesis testing.

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of exp-fam_before is the same across VAR00013 categories.	Mann-Whitney U-test for independent samples.	a	It cannot be calculated.

Asymptotic significance is shown. The significance level is 0.050. a. The group field does not have exactly two values.

6. Discussion

WhatsApp is a resource that allows various topics to be addressed through university tutoring. Previously, tutoring has been identified as a determining factor in the development of autonomous learning, although its scope of action was focused on the academic aspect [56]. This situation has been overcome with the results of the present research, as we have shown that, with the use of WhatsApp as a university tutoring resource, the personal and family aspects of students' lives can be addressed in addition to academic ones, showing an advance in the coverage of this student accompaniment strategy. The tutoring space represents an environment of freedom and trust, where it is important to prioritize students' expression of doubts and concerns regarding their school life as well as their emotions and feelings [57], allowing the development of resilient attitudes and the achievement of a degree of satisfaction with life [58].

Additionally, having a protocol for the use of WhatsApp allows students and tutors to respect agreements concerning schedules and rules of interrelation through this medium, generating conversations that are developed according to the proposed objectives. This ratifies that the organized and planned use of WhatsApp, allowing students to respect the hours of consultations and comments, with reasonable exceptions [29]. Our results confirm that the presence of the teacher influences group conversations [59], especially if they show empathy to generate reflection. Therefore, WhatsApp represents a tool that, when used well, can be a great help for the proposed objectives [33], be these educational more generally or specifically in reference to tutoring.

The success of the use of WhatsApp in university tutoring is linked to the resources used: videos, audio, images, emojis, stickers, and others; linked to a clear objective, they allow for effectively addressing the academic, personal, and family difficulties of students. The tutor can encourage reflection on the topics of interest of students with the aid of teaching resources, recreational activities, and audiovisual material, among others [57]. Our results confirm that information and communication technologies (ICTs) contribute in various ways to the integral development of people, provoking reactions that allow the channeling of emotions when interacting with these tools [2].

It is further highlighted that between the group and personal tutoring modality, students prefer the latter, ratifying the claim that personal tutoring is the most valued by students, far above group tutoring [60]. This confirms that, although WhatsApp did start to be used as a tool for group use, most students preferred to make their doubts, queries, or opinions known in a personal way through private messages [29].

The relevance of communication and interaction evidenced by the use of WhatsApp was constituted as a resource that improves the university tutoring service, as it makes it more flexible and attractive to the student, especially for its influence on fast and effective communication [23], this being a feature that is related to the ease of using this application; ratifying that either by convenience, shortage of time, or shyness, young people prefer to communicate by WhatsApp than face to face [27].

It is confirmed that WhatsApp is the resource that works best for tutorial work, surpassing even face-to-face tutoring, which is explained by the knowledge and skills that students have in the management of this application [11], generating student satisfaction by recognizing the advantages of this method of tutoring compared to other traditional methods [40].

Likewise, it is ratified that students prefer to concretize tutoring communication in real time using technological applications [61], with synchronous communication by message or video call being the aspect that has turned WhatsApp into a resource that can promote the process of academic guidance, counseling, and effective support to students [11].

These statements coincide with the idea that both tutors and students prefer social networks and instant messaging applications such as WhatsApp in non-face-to-face tutoring processes because they are part of their daily life [24].

7. Conclusions and Future Work

WhatsApp is a resource that allows for more spontaneous and friendly communication between tutor and tutored, creating a context conducive to realizing the objectives of university tutoring. This is an aspect that confirms the idea that through WhatsApp a community and a very positive group feeling is created, as students feel that the teacher or tutor is always present [33]. In addition, it is ratified that the relationship between tutor and tutored is framed in a high level of communication, trust, closeness, empathy, and mutual acceptance, aspects that are achieved through permanent interactivity [20], which is greatly favored by the use of WhatsApp. Likewise, it is confirmed that students value having a tutor to help them in their academic work using this instant messaging system, which allows the tutor to respond and comment in a more agile way, further ratifying that quick responses from tutors can help students to continue addressing a problem [62].

With the application of WhatsApp as a tutoring resource, the bonds between tutor and students became more effective, helping group members to develop social skills. This ratifies that the relational connection is very important among group members, and although both vertical and horizontal relationships are possible in tutoring groups, it is more frequent and useful that these are horizontal [63]. Our results agree with the premise that these spaces generate relationships of trust and collaboration which are conducive to the exchange of experiences, opinions, and practical advice [64]. This situation challenges the tutor in a demanding role, forcing them to develop their leadership and fundamental interpersonal skills, as they must relate, listen, and respond to different personalities [65] while training thei own personal dimension [66].

In addition, the results obtained here demonstrate the usefulness of virtual tutoring, as WhatsApp allows permanent accompaniment and communication between tutor and tutored, dispensing with the physical presence of both. This result overcomes previous conceptions that have downplayed the importance of virtual tutoring, indicating that neither students nor tutors were fully aware of the possibilities that ICT can bring to the tutoring modality [60].

The results obtained in this work are positive, and allowed us to contrast the three dimensions of academic, personal, and family. Although the results did not show a significant difference in the academic and family dimensions, in terms of the personal dimension an increase of 5% was found, highlighting the importance of the use of WhatsApp. In addition, this study made it possible to capture impressions. It was possible to determine the effectiveness of WhatsApp as a platform that allows the use of other resources, such as videos, files, and images, as a reinforcement to tutoring. As limitations in this work, it can be mentioned that the quasi-experimental work was conducted with a single teacher-tutor and an experimental group of students intentionally selected as a pilot study. Therefore, the results cannot be generalized. A prospective replication of the study with a larger number of tutors and students would help to provide a more complete view of the usefulness of WhatsApp as a resource for academic, personal, and family tutoring at the university. The possibility of measuring the improvement in the achievement of student competencies as a result of the tutorial action remains open as well.

Finally, the challenges for the future of this work include learning more about the advantages and disadvantages of using WhatsApp through more case studies within higher education institutions, using a larger number of students to strengthen quantitative studies, identifying teaching–learning styles through the formation of study groups between tutors and students, addressing user satisfaction studies for teachers and students in the use of WhatsApp as a tool in the classroom, and adapting the use of WhatsApp to existing learning models and even to generating improvements in them.

Appendix A

INDIVIDUAL TUTORING SESSION

STUDENT NAME:_____ ENROLLMENT CODE:_____

PROFESSIONAL SCHOOL:_____ DATE:_____ TUTOR:_____

The session begins with the question, How are you doing in college? What problems do you have?
From this initial dialogue, ask again, What problem affects you the most? According to the answers, mark with (X) the indicators of vulnerability:

Area	PROBLEMS IDENTIFIED BY THE STUDENT			
ACADEMIC	A.1. Difficulties in attending on time		A.6. Relationship with a teacher	
	A.2. Failing midterm exams		A.7. Abilities and capacities to learn	
	A.3. Difficulties to work in groups		A.8. Study techniques and habits	
	A.4. Difficulty in presentation		A.9. Vocation and identification with the career	
	A.5. Difficulties to perform and present work		A.10. Interest and motivation to study	
	A.11. Others			
STAFF	P.1. Health and fitness		P.7. You feel stressed all the time.	
	P.2. Nutrition		P.8. Personal/emotional security	
	P.3. Housing		P.9. Feeling discriminated against, marginalized	
	P.4. Autonomy and decision making		P.10. Beliefs, spirituality, religiosity	
	P.5. Conflicts in relationships with fellow students		P.11. Limitations in setting personal goals and aspirations (Life Project)	
	P.6. Difficulties in integrating into the group		P.12. Self-esteem	
	P.13. Others			
FAMILY	F.1. Conflict in your relationship with a family member		F.5. Has family members who depend on the student F.6.	
	F.2. Lives alone and it affects him/her.		F.6. Has problems living together as a couple	
	F.3. Does not have the family financial support to continue your studies		F.7. Has children and difficulties coping with their responsibilities	
	F.4. Has a sick family member		F.8. Has suffered the loss of a close relative	
	F.9. Others			

THE STUDENT REQUIRES REFERRAL TO:

Psychology Department ☐

University Welfare Area
Medical Office ☐   Sports and recreation ☐   Residence and dining room ☐   Social Services ☐

Academic Area
Teaching of a subject ☐   School Director ☐   Dean ☐   Academic Vice Rector ☐

University Pastoral ☐

OTHERS:_____

_____   _____
Student's signature   Tutor's signature
DNI   DNI
Phone   Phone

Figure A1. Individual tutoring form approved at UNAP.

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