WhatsApp as a Tool for Integration and Motivation in Distance Education

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Abstract

This article was based on a Distance Education project in the Pedagogy course which, for a semester, through active methodology, reviewed the contents of the course to increase the knowledge of these students as well as to carry out a pilot test of Hybrid Teaching. The research aimed to contribute to studies on the use of WhatsApp as a tool that favors the integration and motivation of students in Online and Hybrid Teaching. The project included classes before the classroom lessons, physical and online presence of tutors and teachers, communication via WhatsApp, e-mail, Facebook and the online course platform to review and raise the course fee, raising doubts and encouraging the participation and integration of each student. The object of the study was the use of WhatsApp throughout the course, due to the adhesion of students and teachers using it as a tool for integration and motivation for the graduates of the 17 poles participating in the project. It is a descriptive research with a quantitative approach and characterized by a survey. 104 students participated in the survey, which guarantees a confidence level of 93%. A questionnaire was elaborated and requested, via Google Forms, to understand aspects of integration and motivation, containing 10 questions using the five-level Likert scale. It was possible to verify that the tool presented a 77% satisfaction index with the use of WhatsApp considering its positive influence in the best use of the studies while 90% considered WhatsApp important in the integration of students with students, and teachers with students. Also corroborated that the student interacts better with the studies when there is an interpersonal relation present, in this case, through the classes of study and face-to-face held weekly and the immediate communication provided by WhatsApp group chats. Finally, there was a strong correlation ($r = 0.8$) between the intensity of satisfaction with the use of WhatsApp in this project and the satisfaction with the continuity of the use of WhatsApp in other courses.

1. Introduction

In Brazil, the concept of Open and Distance Learning (ODL), also known as Distance Education, is officially defined in Decree No. 5622 of December 19, 2005, as an educational modality that uses the means of technology and information in its teaching and learning process [1].

Distance Learning is a way to expand the offer of higher education in the country to achieve Goal 12 of the National Education Plan[1] (PNE). Goal 12 proposes to raise the gross enrollment rate in higher education to 50% and the net rate to 33% of the population aged 18 - 24, ensuring the quality of supply and expansion to at least 40% of new enrollments in the public segment. One of the strategies to achieve this goal was the authorization of courses and institutions, providing market opening for ODL [2].

Although ODL is seen by many with a certain prejudice in undergraduate studies, it has been able to expand. Means to guarantee the quality of this teaching have already been established, such as the ENADE[2] (National Examination of Student Performance) and implementation of the SINAES[3] (National System for the Evaluation of higher education), which is composed of three main components: institutions' evaluations, courses and student performance [3]. Despite these means and others already created, many studies still need to be developed so that the quality of education has its right set forth in the Federal Constitution of Brazil.

In-person teaching is the most common way of teaching, just as it happens in a classroom with student and teacher both present at the same time [4].

Hybrid Teaching intercalates moments in which the student studies at a distance, and others where teaching occurs in a classroom. Hybrid Teaching offers more interactive classes, carrying out projects and research, and relies on information technology resources. This type of teaching internalizes learning to learn [5].

Caetano *et al.* [6], after analyzing a series of researches on the comparison between face-to-face, distance and hybrid teaching, established the following: In Brazil, ODL and face-to-face teaching are equally effective, and the lack of personal contact does not interfere in the teaching-learning process. Another study focuses on how the teaching-learning process can improve if there are often group studies and activities scheduled at the poles. Concern was also expressed about the increase in ODL in the country, bringing a possible drop in quality in

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[1]Plano Nacional de Educação.
[2]Exame Nacional de Desempenho dos Estudantes.
[3]Sistema Nacional de Avaliação da Educação Superior.

this modality of education. The surveys also brought data from the United States in undergraduate, graduate and master's degrees, comparing face-to-face and distance learning. At the undergraduate level, even in disciplines that had the same teacher, the face-to-face method had an income well above that of ODL. In the postgraduate context, the evidence of higher income was similar to that of undergraduate cases. However, in the master's program, the ODL students presented more previous knowledge than the students in the classroom.

The Best Pedagogues Project in Brazil, with the objective of increasing the knowledge of undergraduate students of the ODL and being a pilot test of Hybrid Teaching, was a good field of research for the study of the effectiveness of the WhatsApp tool in the integration and motivation of students of these modalities of learning. The project involved 6 teachers, 17 tutors and 198 students, as well as employees from the administrative sector who provided technical support to the operational part of the project.

2. Theoretical Framework

Learning occurs informally when the subject assimilates different kinds of knowledge, but it is in the teaching-learning process that the appropriation of knowledge interacts with social intentionality. The way in which teaching is organized is what enables intervention in intellectual development [7].

Higher education is a mean for the social development of the country. In order to make higher education viable, there was an access increase in vacancies, as well as in the number of private institutions offering undergraduate courses in the ODL modality [8].

Higher education can be taught in the following modalities: Distance Education, Classroom Teaching and Hybrid Teaching, which combines the two modalities [9].

2.1. Overview of Distance Education

The ODL modality has grown strongly in the country, accompanying the progress of technological and communication media. According to the higher education Census conducted in 2016 by the National Institute of Educational Studies and Research Anísio Teixeira[4] [3], the number of enrollments in undergraduate courses decreased by 1.2% between 2015 and 2016, while those of distance modality increased by 7.2%. The participation of distance education in 2006 was 4.2% of the total enrollment in undergraduate courses and increased its participation in 2016 to 18.6% [3]. It is concluded that the offering of distance education courses is one of the public policies that enabled the increase of the number of enrollments and conclusions in undergraduate courses [10].

Through Decree No. 9 057/2017, published in the edition of the *Diário Oficial da União*, the Ministry of Education determines that institutions may exclusively offer distance-learning courses without the simultaneous offering of face-to-face

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[4]Instituto Nacional de Estudos e Pesquisas Educacionais.

courses. The MEC strategy is to expand the country's higher education offer to achieve Goal 12 of the National Education Plan (PNE), which requires raising the gross enrollment rate in higher education to 50% and the net rate in 33% of the population from 18 to 24 years. All of the changes are aimed at guaranteeing the quality of teaching [3], besides expanding the offer and access to higher education.

The PNE supported the training of teachers for ODL, increased the number of Courses of Distance Education, as well as increased the research on ODL to meet the demand [10].

In addition to missing classes that is not specific to this modality, another worrying factor discussed among researchers in the area is the still existing prejudice about ODL. Vergara [11] argues that the tradition of face-to-face courses and the low quality of some ODL courses are responsible for the distrust of the effectiveness of the modality. But it should not be forgotten that ODL is the fastest way to achieve the expansion of higher education, being justified as democratic and necessary for teacher training [12].

Silva, Oliveira & Mourão [13] cite in their articles that, in terms of quality, the face-to-face and distance modalities are the same. The difference of the face-to-face student and the ODL student is the accompaniment and the interpersonal teacher-student relationship. As Vergara [13] says, in Brazil, the contact with teachers and classmates is an important cultural factor the student. Bahia (2015) [14], in an article that presents the results of a research that investigated the difficulties and/or facilities in the training and professional performance of graduates of the same course of Pedagogy in the face-to-face and distance modalities, concluded that the modality does not matter for the good training of the teacher. Factors such as commitment and maturity in choosing the profession are what define a good teacher.

In the United States, ODL has also gone through quality questioning. The lack of understanding of teaching learning and the non-engagement of teachers, concerned with the quality of Distance Education that they would provide, were some of the reasons for this distrust. From 1988, with the entrance of traditional institutions, ODL began to grow rapidly, and it remains important for accessibility [15].

The teaching-learning process must go beyond having to learn, of fragmented knowledge, not related the whole life of the student. Knowledge must be planned, organized and systematized [16].

The teacher-student relationship through dialogue motivates knowledge and construction of autonomous learning. Faced with this perspective, ODL must be critical and reflective, with a mediator educator and a subject student of the training itself [17].

The degrees are strongly represented in the ODL modality. The Pedagogy course currently comprises an expressive representation of undergraduates in this modality, according to data from the Census of higher education of 2016 [3].

2.2. Hybrid Teaching

Information and communication technologies (ICTs) provided the conditions for the implementation of several Distance Learning modalities, including Hybrid Teaching, which combines classroom and distance learning activities.

Since 2001, through Ordinance no. 2253, revoked in 2004 by ordinance No. 4.059, higher education, if defined in its pedagogical project, can offer 20% of its curriculum in a non-face-to-face way. This arrangement opened the scenario for Hybrid teaching, which makes it possible to unite the best qualities from face-to-face and distance learning, considering the context, pedagogical adequacy, cost and student profile [18].

This Hybrid Teaching, called Blended Learning, has the specific requirements of content for the discipline, to the detriment of the use of any material that the student accesses on the Internet. The classroom activities also require the supervision of the teacher, and should value the interpersonal interactions, with practices complementary to online activities, so as to provide a more efficient, interesting and personalized teaching-learning process [19].

In fact, education has always been mixed or hybrid, since it has always combined various spaces, times, activities, methodologies and audiences. With the advent of mobility and connectivity, this aspect has become much more noticeable, broad and deep, configuring a more open and creative ecosystem. Teaching is also a hybrid, because it is not reduced to what we plan institutionally, intentionally [20].

The combined technology that the student learns in the classroom can benefit the student's learning [19].

The performance of students in Hybrid Teaching is positive. It is based on learning theories that indicate a more promising teaching than the traditional one. It also has its negative side, where the teacher has to be aware that technology is a tool and not a substitution of the lesson. What is pursued is a graduate appropriation of technology for the transformation of the educational system into a more productive practice [21].

2.3. Best Pedagogues Project in Brazil

This article was based on a Distance Education project, in the course of Pedagogy, which during a semester reviewed the contents of the course with the objective of increasing the knowledge of these students and being a pilot test of Hybrid Teaching.

The project was named Best Pedagogues in Brazil and lasted one semester. The course platform was used for access to texts, video-lessons, exercises and forums, with the exclusive assistance of a distance tutor. The contents were worked on in person, through the active methodology of the flipped classroom. The students received the texts to study during the week, having the guidance of a tutor in this previous study. The tutor was responsible for the intermediation between the student and the teacher in the ODL. The tutor's action was to ac-

company and direct the student to seek their knowledge with autonomy and independence [22]. The next week there was a face-to-face class with a course teacher, where students could clear their doubts and broaden their knowledge. At each face-to-face class, they passed an assessment, which was recorded in worksheets for the course coordination to track the performance of each student. The course still counted on distance classes live, fortnightly. The project was based on a model of Hybrid Education [23].

In addition to the virtual platform already used in ODL, teachers, tutors and coordinators created WhatsApp group chats to integrate all the actors and actions of the project. The course also counted on Facebook for this integration [23].

Through WhatsApp group chats, tutors monitored dropping out, raised doubts, encouraged and charged for reading, participating in the forums, and passed course communications. The students interacted with each other and with teachers. Many students had difficulty accessing the distance platform and received guidance via WhatsApp from their own colleagues and tutors, and also interacted by correcting the proposed exercises. Classes and tutoring took place during the night, but conversations via WhatsApp took place on any day and at any time [23].

A diagnostic test was conducted at the beginning of the project to raise the group's degree of knowledge in the content of the course. At that time, the WhatsApp groups had not yet been created. The student only interacted with the other or the teacher in the classroom, weekly. The first diagnostic test had the average score 2. Near the end of the project, another test with course content was applied. In the second diagnostic test, a mean of 4 was obtained. At this point in the project, WhatsApp group chats were already consolidated. After this 2nd diagnosis, the students commented on each other via WhatsApp before and after the official feedback. There was a spontaneous movement of the groups to correct questions through debates and questions. WhatsApp represented, at that moment, a channel of exchange of knowledge and information [23]. However, can WhatsApp be considered an integration and motivation tool in ODL and hybrid teaching?

2.4. WhatsApp Messenger

WhatsApp is not considered a social network, but has the ability to generate numerous social connections through group chats. It can be used on both mobile devices (smartphones and tablets) and personal computers through Internet browsers Google Chrome, Mozilla Firefox and Opera. The application provides a number of free and interesting communication resources, such as sending texts, photos, audios, videos and recently the option to make connections [24].

Another feature that may be particularly important for pedagogical activities is the confirmation of receiving and reading the messages sent.

It is a program accessible to people of different ages and knowledge, allowing the exchange of information easily and quickly [25].

WhatsApp is the most used and growing application in Brazil. Most students use it daily to communicate and to study, being identified as a motivator for the construction of group knowledge [26].

Within educational epistemologies, there is the theory of connectivism, which characterizes learning as a process where individual and technology interact. Learning as well as processing within the individual relies on technology as a manipulating tool [27].

School and teachers should be encouraged to integrate ICTs, already used by students in their cultural and leisure practices, to benefit the development of knowledge and its critical formation, promoting autonomy, creativity and the possibility of learning and sharing knowledge in network [28].

Researchers have already observed that WhatsApp, being an easy access tool for most, can contribute to the communication between teachers and students, bringing integration and promoting debates about what they are studying [29].

Brazilian reports demonstrate the use of the application for educational purposes. WhatsApp was used in Philosophy in Technical Education, Physics in High School, Distance Gamification with teachers and as support for a course in undergraduate course. All the reports dealt with the fact that the groups formed in WhatsApp were effective, bringing more motivation, integration of the students and satisfaction in the debates [29].

In the United States, 290 students from King Edward Hospital at Lahore University in 2016 participated in two WhatsApp group chats from the Department of Ophthalmology for the purpose of academic discussion. Each group chat also included six teachers. The groups answered questions about the effectiveness of the experience for the study of Medicine. 69% of the students rated the activity as effective or above expectation in helping them learn ophthalmology. The authors of the paper bring results from other studies, such as the University of Technology in South Africa and a university in Spain, which corroborate positive results. The benefits of the tool are cited as increasing motivation for learning, a means of helping to reduce knowledge gaps among learners, the enthusiasm for reading in a foreign language, and the ease of interacting with their teachers. Negative points, such as lack of privacy in information, spending and the possibility of superficial learning, have also been cited as potential challenges for learning in mobile networks [30].

The use of WhatsApp focused on pedagogical didactics presents positive and negative points, just like any other tool or method. Kochhann, Ferreira, Souza [31] points out that with the use of planned WhatsApp there are much more gains than losses.

3. Methodological Procedures

The present research, carried out at the end of the Best Pedagogues Project in Brazil, took place according to the following steps.

The beginning occurred with the research and analysis of the data registered

by the project regarding the performance of the students, through two diagnostic tests, one at the beginning of the project and another at the end. The mean of the first test was 2 and in the second diagnosis it was 4.

The next step was to conduct a survey with the students, in which questions were asked about the use of WhatsApp as a tool for student integration and motivation. First, questions were asked to analyze the effectiveness of the questionnaire (survey). Next, the scale that would be used to measure the degree of integration and motivation of the students was chosen. Finally, students were invited to respond the questionnaire impartially using WhatsApp itself.

In order to operationalize the questionnaire, it was prepared using the Google Forms tool and a consent form was sent to the students. The questionnaire link was also sent to students through WhatsApp, with a total of 104 students participating.

The analysis phase of the responses was the next, ending with the results raised through the research and project data.

The research is applied in ODL, in Hybrid Education and even in face-to-face teaching. Their approach is qualitative, because there is closeness to context and interpretation of the research. It is quantitative because the survey was used to collect data through the questionnaire, as well as the statistical analysis with the aid of data correlation.

The applied questionnaire, referring to the use of WhatsApp as a tool for study, integration and motivation in ODL and Hybrid Teaching, is presented in Table 1.

In the statistical analysis the correlation as to the satisfaction of the presence in the WhatsApp groups in the project was established, as well as the level of satisfaction if WhatsApp is adopted as a pedagogical didactic communication tool in the next distant course.

The study population was of 198 students. For the calculation of the sample, a 7% error (93% confidence level) was considered and, using Equation (1) [32], a sample of 104 students.

$$n = \frac{N \cdot n_o}{N + n_o} \tag{1}$$

where:

n—Size of the sample

n_o—first approximation of the sample size

N—Size of the population

4. Results and Study Analysis

The general objective of this work was to contribute with the studies on the use of WhatsApp as a tool that allows the integration and motivation of students in ODL and Hybrid Teaching. The overall objective was reached and supports the conclusions of this work.

Table 1. Questionnaire to assess students integration and motivation in using WhatsApp.

Questions	Answers				
	1	2	3	4	5
1) How do you rate your satisfaction regarding the presence of WhatsApp groups in the project?					
2) Has WhatsApp use in the project influenced how you study, participate, and increase your content performance?					
3) Has the use of WhatsApp in the project allowed the exchange of information between students/ students and students/ teachers?					
4) Has WhatsApp use in design met your needs whenever you used it?					
5) How do you rate your satisfaction with the subjects covered in WhatsApp by group members?					
6) Did the teacher's participation in conducting WhatsApp in the project contribute to the involvement and participation of the class?					
7) Was using WhatsApp in the project important for better alignment between you, your colleagues and teachers?					
8) Did the use of WhatsApp in teh project contribute significantly to the best use of your study?					
9) Did WhatsApp help with the project?					
10) What would be your level of satisfaction, if in the next distant you do WhatsApp is adopted as a pedagogical didactic communication tool?					

Legend: 1: Totally unsatisfied; 2: Partially unsatisfied; 3: There is no difference; 4: Partially satisfied; 5: Totally satisfied.

In the questionnaire, to evaluate the integration and motivation of the students in the use of WhatsApp, when analyzing the answers of Figure 1 and Figure 2, the result regarding the classification of satisfaction and positive influence of the tool in the study, the same numbers of answers were obtained within of the Likert scale. 77% of students were totally satisfied, 17.3% partially satisfied, 4.8% said it made no difference and 0.9% was unsatisfied.

Figure 3 and Figure 4, respectively, show that 91% of students are totally satisfied with the exchange of information between the project actors, and 4.76% indicate that the use of WhatsApp met their needs on time.

When the use of WhatsApp and the formation of groups in the project was adopted, there was no formal establishment of rules for discussion and the topics of conversation should be restricted to the interests of the groups within the project themes. Most groups absorbed the rule tacitly, while other groups sometimes misrepresented the relevant themes. Around 27% of the students answered that they were partially satisfied with the subjects addressed by the groups, proving that it is essential to establish the rules and planning.
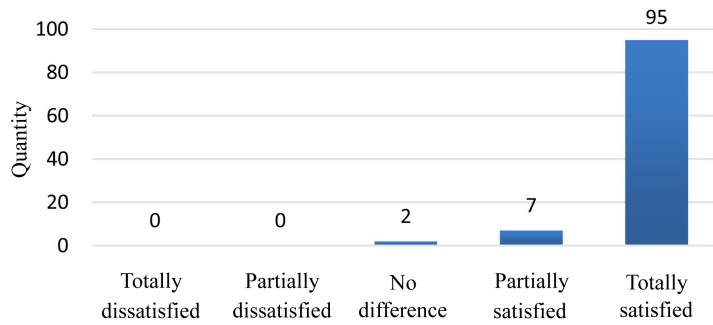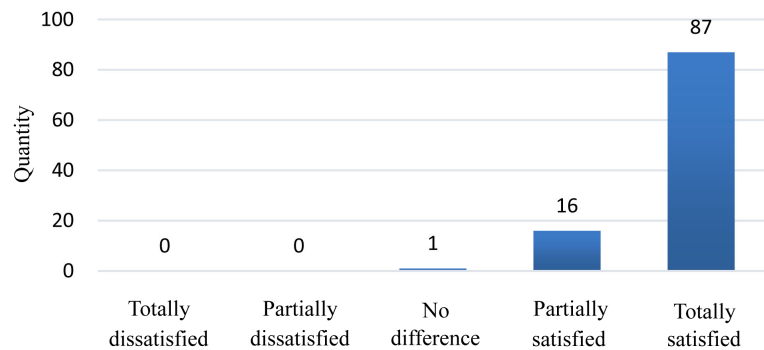
Figure 1. Satisfaction in the exchange of information between students/students and students/teachers. Source: Authors (2018).
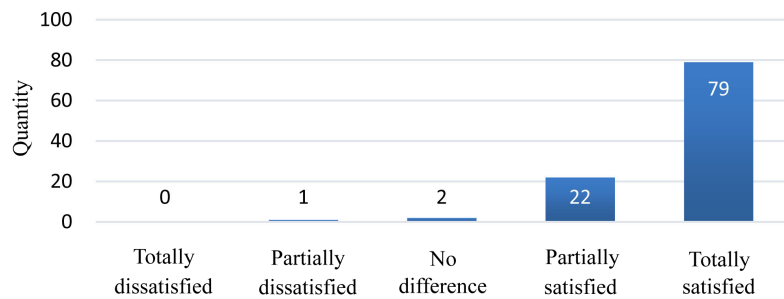
Figure 2. Satisfaction in meeting specific project needs. Source: Authors (2018).
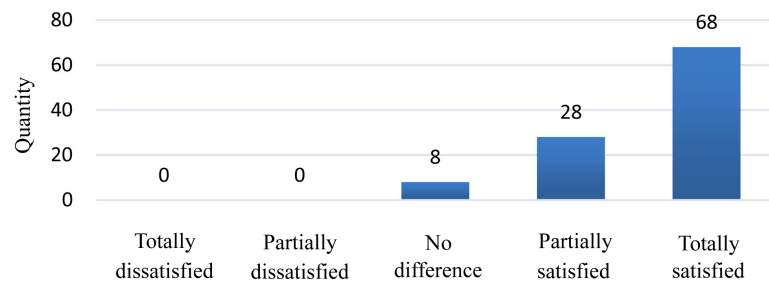
**Figure 3.** Satisfaction with subjects covered in WhatsApp group. Source: Authors (2018).

Figure 4. Satisfaction regarding the participation and conduction of teachers in the topics addressed in the groups. Source: Authors (2018).

According to the research data, **Figure 5** shows that 87% of the students felt totally satisfied with the conduction of teachers in the themes covered in the

WhatsApp group chats and 90% reinforce that this provided a better link between students/students and teachers/students. WhatsApp enabled the increase of personal relationships and the development of the group's sense of belonging and collaboration in a synchronous and asynchronous way.

As shown in Figure 6 and Figure 7, the percentage of the totally satisfied, with 77%, indicated that there was better use of the study and 84% said that the use of WhatsApp helped to raise doubts. These results indicate that the tool is an effective way to solve doubts and stimulate studying, either by the agility and speed of WhatsApp or by the feeling of belonging to the group, reasons that deserve a later study.
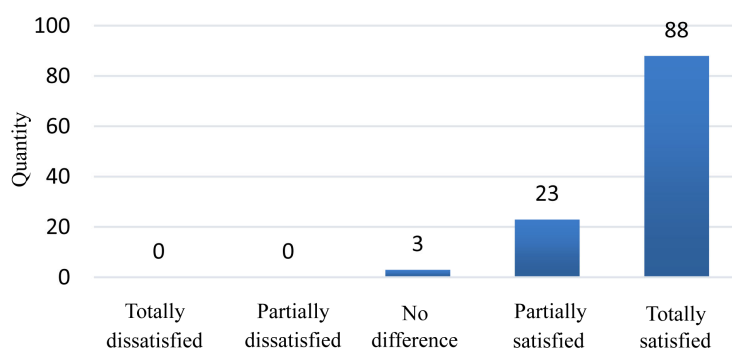
Figure 5. Satisfaction regarding the relationship between students and teachers. Source: Authors (2018).
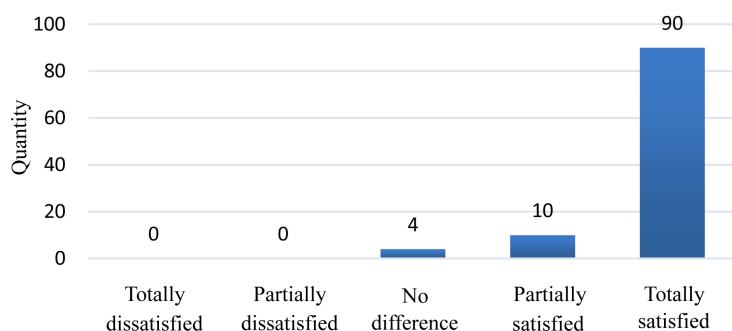
Figure 6. Satisfaction regarding the use of the study in the groups. Source: Authors (2018).
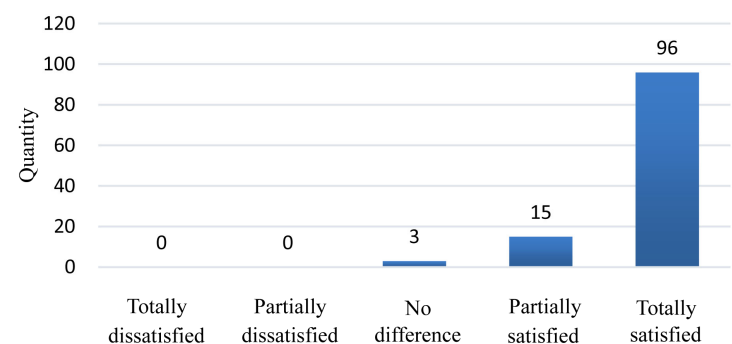
Figure 7. Satisfaction with doubts in WhatsApp groups. Source: Authors (2018).

Figure 8 shows that of the total, of the 104 students who answered the questionnaire, 94 confirmed to be satisfied by attending an upcoming course that also used WhatsApp.
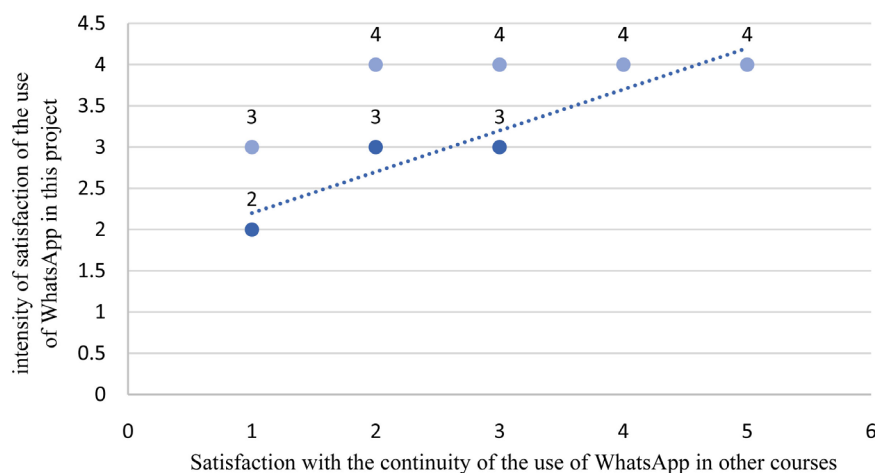
Table 2 presents the reasons for student engagement in WhatsApp groups during the project.

Motivation in study and participation was chosen by 58 people. The following was the orientation in the organization of the study and commitment to the course, with 56 choices. The answered questions item was pointed out by 44 students. But while the above-mentioned items achieved a good number of choices, it was clear teacher-student integration that was provided by WhatsApp was important with 84 choices. The integration has provided a welcoming environment for the student.

The trend observed in Figure 9 indicates the existence of a strong correlation between the two analyzed variables. This high correlation index is confirmed by the statistical correlation coefficient of 0.8 (index close to 1.0 which would indicate the existence of a perfect correlation).
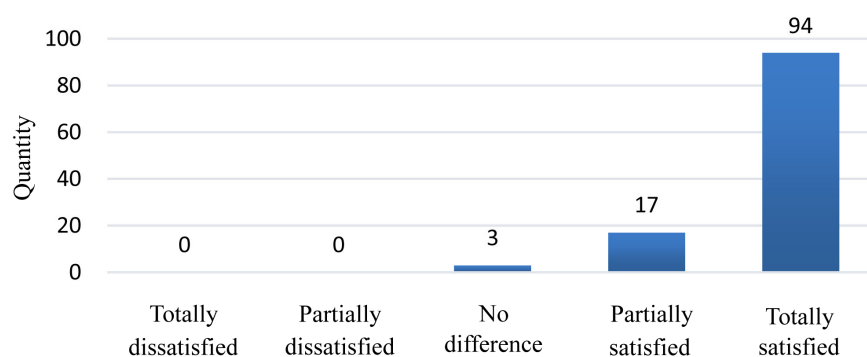
Figure 8. Level of satisfaction had if an upcoming course also uses WhatsApp. Source: Authors (2018).

Figure 9. Correlation of the intensity of satisfaction of the use of WhatsApp in this project and the satisfaction with the continuity of the use of WhatsApp in other courses. Source: Authors (2018).

Table 2. Reasons for student engagement in WhatsApp groups during the project.

Items	Number of students
Consistent answers to your questions	44
Integration of students with students and students with teachers	84
Motivation to study and participate	58
Guidance in organizing your study and commitment to the course	56
WhatsApp made no difference at any point in the project	0

Source: Authors (2018).

5. Conclusions

Being a unique technology, allowing the synchronous and asynchronous connection, mobile use and free and interesting communication resources, WhatsApp has shown that it can be used to reduce the problems of geographic and temporal distance present in both Distance Education and Hybrid Teaching.

Some authors argue that between ODL and Online Teaching there is the same effectiveness and the lack of personal contact does not interfere in the teaching-learning process. Others suggest that the teaching-learning process can improve if there are often studies and group activities programmed at the poles.

During the Best Pedagogues Project in Brazil, it was observed that the integration between students and teachers and students with students, was increased by the number of times that there was an exchange of messages in the group, by the quality of the messages, by statements that emphasized that participation in the project and integration achieved made a difference in school and personal life.

The welcoming atmosphere provided by the WhatsApp group chats contributed to the graduates taking ownership of the contents, participating in or observing the movement of ideas. During each weekly class, face-to-face, new contents were presented and the exchange between the students until the next lesson enhanced the comprehension of the themes. It was observed that the students used the tool to discuss the questions proposed in the course material, raising the points that would be true and pointing out the mistakes in the answers given by the group, encouraging the group to study, despite the geographic distance.

Student achievement doubled over the course of the project. From the average 2 of the 1st diagnostic test, it passed to 4 in the 2nd diagnosis performed at the end of the project. It was found during the project that interaction with others provided the stimulus to learn, even after a tiring day of work. WhatsApp on its own does not change the student's posture of the ODL; rather, participation and integration need to be stimulated by the teacher, tutor or a participatory student.

WhatsApp, although a widely known and widely used communication tool, needs to be further explored as an educational tool.

There are many possibilities in using ODL and Hybrid Education, which with planning and knowledge of the tool can be positive to increase the quality of higher education in Brazil.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

[1] Brasil. Decreto n. 5.622/2005, de 19 de dez. de 2005. Regulamenta o art. 80 da Lei N.9.394, de 20 de dezembro de 1996, que estabelece as diretrizes e bases da educação nacional.

[2] Observatório do PNE (2018) https://www.observatoriodopne.org.br/

[3] Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira-Inep. Sinopse Estatística da Educação Superior 2015, Brasília: Inep, 2016.

[4] Alves, L. (2011) Educação a distância: Conceitos e história no Brasil e no mundo. *Revista Brasileira de Aprendizagem e a Distância*, **10**, 83-92.
https://doi.org/10.17143/rbaad.v10i0.235

[5] Junior, E.R. and DE Camargo, N.M. (2016) Uma experiência em ação: Aprofundando conceito e inovando a prática pedagógica através do Ensino Híbrido. SIED: EnPED-Simpósio Internacional de Educação a Distância e Encontro de Pesquisadores em Educação a Distância.

[6] Caetano, C.C.R., *et al.* (2015) Desempenho no ENADE em ciências contábeis: Ensino a distância (EAD) versus presencial. Revista Universo Contábil.

[7] Moura, M.O., *et al.* (2010) Atividade Orientadora de Ensino: Unidade entre ensino e aprendizagem. *Revista Diálogo Educacional*, **10**, 205-229.

[8] Santos, P.K. and Giraffa, L.M. (2016) Evasão na educação superior: Um estudo sobre o censo da educação superior no Brasil. Congressos CLABES.

[9] Hayashi, C. (2020) Digital Technologies in Distance Education: Phases, Models, Platforms and Tools. *Research, Society and Development*, **9**, e8079109295.
https://doi.org/10.33448/rsd-v9i10.9295

[10] De Souza Assumpção, G., De Carvalho Castro, A. and Chrispino, Á. (2018) Políticas Públicas em Educação Superior a Distância–Um estudo sobre a experiência do Consórcio Cederj. *Ensaio: Avaliação e Políticas Públicas em Educação*, **26**, 445-470.
https://doi.org/10.1590/s0104-403620180026000938

[11] Vergara, S.C. (2007) Estreitando relacionamentos na educação a distância. *Cadernos EBAPE.BR.*, **5**, 1-7. https://doi.org/10.1590/S1679-39512007000500010

[12] Alonso, K.M. (2010) A expansão do ensino superior no Brasil e a EaD: Dinâmicas e lugares. *Educação e Sociedade*, **31**, 1319-1335.
https://doi.org/10.1590/S0101-73302010000400014

[13] Silva, J.A., Oliveira, F.B. and Mourão, L. (2012) Uma comparação entre cursos a Distância e Presencial. http://www.abed.org.br/congresso2012/anais/339f.pdf

[14] Bahia, N.P. (2015) Curso de Pedagogia presencial e a distância: Uma análise sobre a formação e a atuação de egressos. *Acta Scientiaun Education*, **37**, 301-312.
https://doi.org/10.4025/actascieduc.v37i3.24388

[15] Kentnor, H.E. (2015) Distance Education and the Evolution of Online Learning in the United States. *Curriculum and Teaching Dialogue*, **17**, 21-34.

[16] Libâneo, J.C. (2005) As Teorias Pedagógicas Modernas Revisitadas pelo Debate Contemporâneo na Educação.
http://www.ia.ufrrj.br/ppgea/conteudo/T1SF/Akiko/03.pdf

[17] Gadotti, M. (2000) Perspectivas atuais da educação. *São Paulo em Perspectiva*, **14**,

3-11. https://doi.org/10.1590/S0102-88392000000200002

[18] Litto, Fredric, M. and Formiga, Marcos (2009) Educação a Distância: Estado da Arte. São Paulo: Pearson Education do Brasil.

[19] Valente, J.A. (2014) A comunicação e a educação baseada no uso das tecnologias digitais de informação e comunicação. Unifeso-Humanas e Sociais.

[20] Bacich, L. and Moran, J. (2015) Aprender e ensinar com foco na educação híbrida. *Revista Pátio*, 45-47.

[21] Camillo, C M. (2017) Blended Learning: Uma proposta para o ensino híbrido. *EaD & Tecnologias Digitais na Educação*, **5**, 64-74. https://doi.org/10.30612/eadtde.v5i7.6660

[22] De Almeida, A., Pimentel, E.P. and Stiubiener, I. (2012) Estratégias para o Monitoramento de Ações de Tutoria na Educação a Distância. Workshop sobre avaliação e Acompanhamento da Aprendizagem em Ambientes Virtuais. Anais. http://www.br-ie.org/pub/index.php/wcbie/article/view/1947/1706

[23] Bernardes, A., *et al.* (2017) Projeto Melhores Pegagogas do Brasil. UNISOCIESC, Universidade Sociedade Educacional de Santa Catarina, Joinville.

[24] WhatsAPP. Informação Legal do WhatsApp. https://www.whatsapp.com/legal

[25] Bouhnik, D. and Deshen, M. (2014) WhatsApp Goes to School: Mobile Instant Messaging Between Teachers and Students. *Journal of Information Technology Education: Research*, **13**, 217-231.

[26] Souza, L.R.A., Freitas, C.B. and Santos, J.M.M.S. (2012) WhatsApp—Inimigo Ou Aliado Na Educação: Um estudo de caso sob a ótica dos discentes. Proceedings of Congresso Brasileiro de Educação à Distância. http://www.abed.org.br/congresso2016/trabalhos/113.pdf

[27] Steinert, M.É.P. and Hardoim, E.L. (2017) Leigos ou excluídos? A criação de um aplicativo educacional e seu uso via ensino híbrido em uma escola pública. *Sustinere Revista de Saúde e Educação*, **5**, 90-113. https://doi.org/10.12957/sustinere.2017.25067

[28] Struchiner, M. and Giannella T. (2016) Com-viver com ciência e cidadania: Uma pesquisa basedaem designi integrando a temática da saúde e o uso de tecnologias digitais de informação e comunicação na escola. *Revista e-Curriculum*, **14**, 942-969.

[29] De Paiva, L.F., Ferreira, A.C. and Corlett, E.F. (2016) A utilização do WhatsApp como ferramenta de comunicação didático-pedagógica no ensino superior. Anais dos Workshops do Congresso Brasileiro de Informática na Educação, 751. https://doi.org/10.5753/cbie.wcbie.2016.751

[30] DAR, Q.A., Ahmad, F., Ramzan, M., Khan, S.H., Ramzan, K., Ahmed, W. and Kamal, Z. (2017) Use of Social Media Tool "WhatsApp" in Medical Education. *Annals of King Edward Medical University*, **23**, 39-42. https://doi.org/10.21649/akemu.v23i1.1497

[31] Kochhann, A., Ferreira, K.C.B. and Souza, J.M. (2015) O uso do WhatsApp como possibilidade de Aprendizagem: Uma experiência no Ensino Superior. IV Semana de Integração: XIII Semana de Letras, XV Semana de Pedagogia e I Simpósio de Pesquisa e Extensão (SIMPEX)—"Educação e Linguagem: (Re)significando o conhecimento" 2015, 473, UEG.

[32] Montgomery, D.C. and Runger, G.C. (2009) Estatística Aplicada e Probabilidade Para Engenheiros. 4 ed. Rio de Janeiro: LTC—Livros Técnicos e Científicos Editora S.A.