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MLSER is a scientific publication that is published twice a year, in June and December.

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Editorial

We begin this first issue of 2022 increasingly distanced from the pandemic that has been affecting us in recent years. Although in no case has it been able to affect the world of research, it has affected it due to the difficulty of access to the specific contexts of study. Proof of this are the hundreds of articles that continue to arrive at MLSER in a continuous flow of very diverse topics.

Teacher training is one of these lines of work that remains stable. The first three articles are part of it. The first of them refers to the analysis of the strategies employed by nursing faculty to meet the retention of students enrolled in a nursing program in Puerto Rico. The purpose of the study was to explore the strategies used by educators to retain students in their courses, already knowing the various situations that affect it. The conclusion is that educators should be familiar with retention strategies that guarantee an excellent education.

The second one evaluates the satisfaction index of teachers participating in the course of entrepreneurial education: young entrepreneurs in public schools in the state of Rondônia (Brazil). It is a qualitative-descriptive study in which 245 teachers from 6 cities of this Brazilian state participated. The results show that the course has had a positive effect on teachers and students who continue to demonstrate an entrepreneurial spirit.

The third study analyzes the teaching competencies of undergraduate teachers working at the basic education level in the city of Soacha (Colombia). It uses techniques such as interview and survey in 50 teachers. The study shows the real profile of teachers at the undergraduate level of education and their strengths and weaknesses at the time of professional practices as well as the approach to the profiles requested by the state. Likewise, it will give guidelines to project improvement plans.

The MLSER issue continues with two studies related to technologies. On the one hand, the association between the achievement of meaningful learning in Early Childhood, the level of comprehension, and Augmented Reality (AR) in an ICT-mediated environment. For this purpose, the quasi-experimental method was used with two groups A and B that used AR in alternative phases of the study. The study was carried out at the Colegio República de Colombia I.E.D. in Bogotá. The results show an increase in comprehension levels for each of the dimensions considered in the conceptual framework of comprehension. On the other hand, ICTs are analyzed to strengthen multiple intelligences and to learn history in secondary school at the Instituto Adventista Florida (Buenos Aires, Argentina), a private denominational school with 340 students enrolled in secondary education. Through a mixed study, they worked with 74 students of the Social Sciences modality of Upper Secondary Education and collected data from 22 educators, 14 teachers, and 8 directors. The results show the importance of implementing WebQuest integrated in Project Based Learning to improve learning in History with the use of ICTs, favoring Multiple Intelligences.

In another line of work, the study on the non-place of hearing-impaired children in the hearing culture, which aimed to identify the cultural realities in which a group of 24 hearing impaired children, together with their parents, are involved in an important educational institution in the city of Villavicencio (Colombia). A qualitative methodology based on interview, social mapping and group discussion was used. As a general conclusion, it is evident that there is no place for hearing impaired children within the hearing culture. Likewise, the existence of the phenomenon of exclusion is verified, which

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is exercised from a hearing majority of the Spanish language towards a linguistic-cultural minority.

The issue continues with the work based on the applicability and effectiveness of flamenco as a tool for socio-educational intervention. The ethnographic method is used, based on the compilation of experiences that were analyzed in depth over more than five years in different parts of Andalusia. The results obtained shed light on the multiple possibilities of flamenco as a tool applied to socio-educational intervention in the sense that it contributes concrete elements to the interventions studied that favor the success of the work carried out.

The review is completed with a study in the Angolan context which shows the importance of the link between universities and business, with the aim of analyzing the capacity to generate knowledge through research, technological development, and innovation in the process of knowledge transfer in the construction of a sustainable development model. In the Angolan context, the challenge is the asymmetry of economic and political powers. For this reason, the effort must be to work on those issues of sustainable development in which scientific research focused on renewed and interdisciplinary efforts can play an important role.

Antonio Pantoja Vallejo
Editor Jefe / Editor in Chief / Editor Chefe

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STUDY ON THE ANALYSIS OF THE STRATEGIES USED BY THE NURSING FACULTY TO COMPLY WITH THE RETENTION OF NURSING PROGRAM STUDENTS

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Abstract. Background: School dropout is a phenomenon that affects educational institutions in all its categories and social strata. In recent years, educational institutions in Puerto Rico have reported a drop in student enrollment. This has created financial complications and therefore the closure of programs and layoffs, among others. Various studies that face situations in the family, social, work, among other factors, use the lack of commitment of students to finish their degree. The purpose of the study was to explore the retention strategies that educators use to retain students in their courses, already knowing the various situations that affect retention. Methodology: Qualitative of a transversal nature. Demographic data were collected, instruments were applied, and interviews were conducted. Twelve physicians were interviewed. The interview was audio recorded and the data was transcribed word for word. The data were subjected to content analysis. Findings: Through this study, it was possible to analyze the strategies most used by the nursing faculty to retain their students until the end of their courses without affecting teaching. Retention is extremely important, help to obtain data, strengthen statistics, make decisions and reports that are provided to the various accrediting agencies. Shortcomings of our students were also known, such as the priority of work and taking their family forward, leaving their studies in a third plane. Conclusion: Educators must be familiar with retention strategies that guarantee an education of excellence.

Keywords: Faculty, Student, Retention, Educational strategies, Retention strategies

López Lebrón, J. & Torres Pagán, L.

ESTUDIO SOBRE EL ANÁLISIS DE LAS ESTRATEGIAS EMPLEADAS POR LA FACULTAD DE ENFERMERÍA PARA CUMPLIR CON LA RETENCIÓN DE LOS ESTUDIANTES DEL PROGRAMA DE ENFERMERÍA

Resumen. Antecedentes: La deserción escolar es un fenómeno que afecta a las instituciones educativas en todas sus categorías y estratos sociales. En los últimos años, las instituciones educativas de Puerto Rico han reportado una baja en la matrícula de estudiantes. Esto ha creado complicaciones económicas y por ende el cierre de programas y despidos, entre otras. Diversos estudios establecen que situaciones en la familia, sociales, el trabajo, entre otros factores, contribuyen a la falta de compromiso de los alumnos para finalizar su carrera. El propósito del estudio fue explorar las estrategias de retención que utilizan los educadores para retener estudiantes en sus cursos, conociendo ya las diversas situaciones que afectan la retención. Metodología: Cualitativo de índole transversal. Se recogieron datos demográficos, se aplicaron instrumentos y se realizaron entrevistas. Se entrevistaron 12 facultativos. La entrevista fue grabada en audio y los datos se transcribieron palabra por palabra. Los datos fueron sometidos a análisis de contenido. Hallazgos: A través de este estudio se logró analizar las estrategias más utilizadas por la facultad de enfermería para retener sus estudiantes hasta finalizar sus cursos sin afectar la calidad de la enseñanza. La retención es de suma importancia ayuda para obtener ayudas datos, fortalecer estadísticas, tomar decisiones e informes que se le proveen a las diversas agencias acreditadoras. También se conocieron carencias de nuestros estudiantes como fue la prioridad del trabajar y sacar a su familia hacia adelante dejando sus estudios en un tercer plano. Conclusión: Los educadores deben estar familiarizados con estrategias de retención que garanticen una educación de excelencia.

Palabras clave: Facultad, Estudiante, Retención, Estrategias educativas, Estrategias de Retención

Introduction

The World Health Organization (WHO, 2020) states that there is currently a growing need for quality information on human resources in health systems to improve decision-making and policies at the national and international levels. Eighty-seven percent of nursing professionals are concentrated in three countries in the Americas: Brazil, Canada, and the United States, which are home to 57% of the region's total population; that is, 80 nurses per 10,000 inhabitants in these countries, which contrasts sharply with the less than 10 nursing professionals per 10,000 inhabitants in Haiti, Bolivia, and the Dominican Republic (WHO, 2020). Another relevant fact according to WHO is that 3% of the nursing workforce is 55 years of age or older and is expected to retire in the next 10 years. Finally, the WHO also indicated that, in terms of the nursing profession, by 2030, countries will have to increase the total number of nursing graduates by an average of 8% per year and improve their employment and retention options for these health personnel. Moreover, educators play an important role with students, the educational institution to which they belong to, society, the future of the country, adjacent regions, both nationally and globally, and student retention. Through education, professional formations emerge that contribute to manage, remedy, and solve the needs that arise daily in our environment, in the country, and in the situations faced

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by the human being. The Manual on Monitoring and Evaluation of Human Resources for Health (Dal Poz, 2009) states that it is estimated that the world lacks over 2.3 million doctors, nurses, midwives, and more than 4 million health workers in general. WHO (2020) states that the Americas are home to 30% of the world's nurses, or about 8.4 million, 87% of whom are women. This concentration of nursing professionals is observed in only three countries that are home to 57% of this population.

The SARS-COV-2 pandemic made visible the fundamental role that nurses and other health professionals play in protecting people's health and saving lives. For this reason, it is important to understand and analyze the strategies that are employed by the nursing faculty to retain their students so that they become future professionals and contribute to the labor demand that exists in the world and especially in the Caribbean.

Public and private institutions offering professional studies in Puerto Rico are facing challenges in meeting the demand to maintain their enrollment numbers until students complete their professional careers. As described by Munizaga et al, (2018) the phenomenon of dropout and the retention needs of their students by professional schools within the Latin American and Caribbean region entails important social and economic repercussions, both for students, as well as for society as a whole. Attrition is a problem experienced by universities worldwide, not only in Latin America (Nuñez, 2020). In recent years, the issue of retention of enrolled students has become of vital importance in university education systems worldwide, mainly in the United States. Retention refers to the strategies that are employed by the institution to convince the student to remain in the institution. Attrition, on the other hand, is the action of abandoning the educational career. This phenomenon of student retention has continuously been the subject of study due to the negative repercussions it implies because, although it occurs in the educational sector, it affects the social and economic development of nations and influences the individual's ability to give in to a job, a home, and a decent lifestyle (Velázquez and González, 2017). In Puerto Rico, very little research has been conducted on the strategies that faculties use to retain their students throughout the professional path in which they enroll. Evidence indicates that student retention is negatively affected by lag factors; failure and absenteeism that would be considered very complex factors (Velázquez and González, 2017). Students are the customers of the institutions, so everything possible must be done to retain them, and it is not a job that will have to be done in isolation by the university but includes training teachers on the subject (Haverila and McLaughlin, 2020). To address the gap that exists in Puerto Rico and to collect data from the nursing faculty, this qualitative research was conducted on the retention strategies used by the nursing faculty to retain students in their courses.

Research Questions

The research questions were: What educational strategies do faculty use to retain their students? What strategies are currently helping faculty to retain their students through the completion of their coursework and selected educational program? and What strategies have worked for other nursing faculty to retain their students in their coursework?

Method

This study is qualitative with a hermeneutic phenomenological research approach which emphasized in this study the lived experience of the faculty participants of this study

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regarding the best strategies to retain their students until the end of their course. The topic of retention was guided through open interviews so that they could open up and share their feelings and experiences in order to contribute to other nurse educators. This approach allowed us to approach the knowledge, meanings, similarities, and understanding about the experience shared through the participants about retention strategies. Within the field of nursing, hermeneutic phenomenology is presented as a great attraction since it favors understanding the phenomenon under study and understanding the experiences of nursing practitioners from various educational institutions, selecting or seeking strategies to combat the problem of retention of nursing students in their courses. The components provided through this approach were that the participants provided tools for a better understanding and contribution on the meaning of each of these participants on the subject. They also contributed with strategies that have been effective in contributing to the preparation of excellence of future nursing professionals who will eventually revalidate and execute various skills or competencies, with diverse human beings in various stages and health conditions.

The sample consisted of 12 physicians working in public and private systems in various nursing programs in Puerto Rico. The selected participants met the following inclusion criteria: (1) three years of experience or more in the educational area, (2) with Master's or Doctorate degrees in Nursing Sciences, (3) offering courses in nursing programs, and (4) who agreed to be interviewed and that the interview was audiotaped. No practitioners with one year of work experience and who were not professional nurses participated.

The semi-structured interview guide was designed by the researcher based on the literature review. These questions were validated by a panel of five experts on the topic of retention, education, membership, enrollment, students, and faculty. These experts work in an educational institution as educators and hold administrative leadership positions during their experience. They were asked to evaluate each question to verify if they met the clarity of the research problem, wording, or offered recommendations that would help in the reliability of the study guide. A second validation of the interview guide was performed with two other professional practitioners in the area of nursing education with more than 3 years of experience. (Table 1).

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Table 1
Interview Guide

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Part I: Interview on sociodemographic profile of study participants
1. Gender:
2. Age:
3. Nationality:
4. Experience:
    a. How many years have you been practicing as a nursing professional in structured and unstructured settings, not including education?
    b. How many years have you been working in the educational role as a practitioner in the existing nursing programs on the Island?
5. Geographical location of work area:
    a. In which zone of the Island do you work (north, south, east, or west)? If you work in more than one zone, please specify the zones you work in).
6. Academic Preparation:
    a. Mention your current academic preparation. If you have other information relevant to your academic preparation, please share it.
7. Employment:
    a. Are you currently employed full time or part time?
    b. You are currently working as a faculty member in a private or public university. If you work in both systems, please specify.

Part II: Question Guide
1. What is your understanding of the term student retention?
2. What questions do you have regarding student retention?
3. Letting ourselves be carried away by percentages or by the parameters: majority, minority, half, or none.
    a. What number or what approximate percentage of students do you understand they retain the courses you taught or currently teach? Why?
    b. What has affected you in maintaining retention?
    c. What helps you maintain retention in your courses?
4. What strategies do you use most to retain your Nursing Program students?
    a. Why do you understand that you must use these strategies to retain your students?
    b. Of all the educational strategies you know or use in the classroom, which do you think is the most effective? Why?
    c. What do you understand to be the most effective strategy for retaining students in the Nursing Program?
5. What level of importance do you place on student retention?
6. What other factors at the institutional level do you understand affect or help student retention to degree completion?
7. Why do you understand that educators in the Nursing Profession find it difficult to retain students in their various courses?
8. In what semester or in what year do you understand that if we do not add retention efforts and strategies to retain students we may lose the student from the Nursing Program?
9. What benefits does student retention bring to you and the educational institution you work for?
10. How does student retention affect you as an educator? - If it affects you, if not, we move on to the next question.
11. How do you feel about student retention?
12. Why do you understand that educators must have good student retention?
13. What are the consequences for you as an educator of not retaining your students in the courses you teach?
14. What do you understand to be the best strategy you have used to retain nursing students in your courses until the end of their professional careers? And why do you consider it to be the best strategy, based on your educational experience?

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Procedure

This study was approved by the UNINI International Institution Ethics Committee panel. After advertising the research study on various educational institutions and social media platforms, such as Facebook and Instagram, several practitioners contacted the researcher to participate. Those who met the inclusion criteria were explained what the study consisted of and what was expected of them and were asked to sign the informed consent form. Then, an appointment for the interview was arranged by mutual agreement in a private place in the offices provided by the educational institutions or in private rooms in the libraries of the educational institutions. It was explained to them to use a pseudonym to protect their identity and privacy. The participants did not receive any incentive for their participation in this study. The study lasted approximately one year.

Qualitative research seeks to explore in order to obtain in-depth knowledge of a phenomenon or problem by obtaining subjective data shared by the participants; therefore, data analysis does not involve the use of programs or statistics. The *Carrying Out Qualitative* method was used for the analysis process of this study. First, to maintain the rigor of the approach, the interviews were listened to and transcribed word for word. Second, themes were identified that reflected the amount of data common to the participants. This step facilitated the coding of the data. All participant recordings were erased at the end of the study.

Results

Sociodemographic Characteristics

Twelve faculty members participated, including nine women and three men from various educational institutions. Sociodemographic data were requested including gender, age, length of time as an educator and nurse, place of birth, area of work, academic preparation, and whether the faculty was full or part-time. The majority of the sample ranged from 21-60 years and consisted mostly of faculty between the ages of 41 and 50 years (Table 2).

Table 2
Sex of participants

Age Range	Sample of participants
20-30	1
31-40	3
41-50	6
51-60	2
61 or more	0
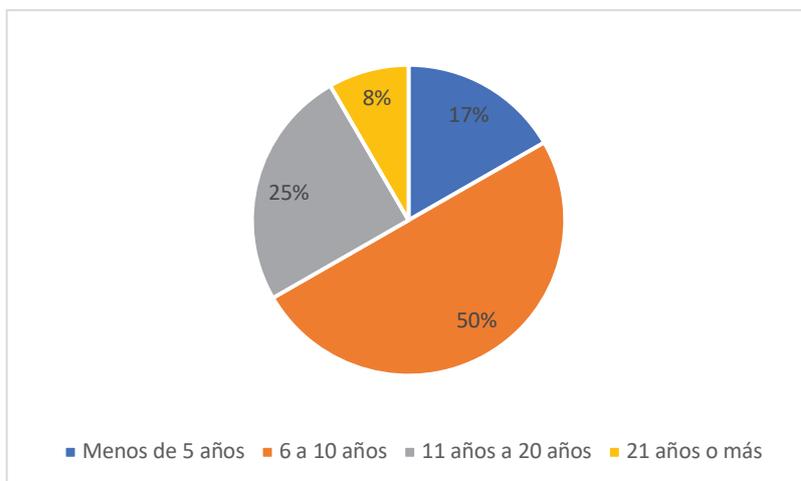
Figure 1. Seniority as a professional

Since the questions were semi-structured with open-ended questions, an analysis was made of the answers given by the participants, as shown in (Table 3).

Table 3
Results of the interview application

ITEM	INTERVIEW RESULTS
Item 1	Most of the participants were able to define the concept of retention correctly or close to what is reported in the documentary part of the study. On the other hand, they expressed diverse knowledge and definitions about student retention. *A female participant in the study verbalized, "Retention is a strategy that the professor creates according to the diversity of students we have in a course, to prevent the student from dropping out of the course, or abandoning their studies as a nurse." Female participant of the study verbalized, "To ensure that no matter how difficult it is for the student in the course, he/she stays, because he/she can count on me as a professional, and I will look for strategies so that he/she stays in the course and shows interest until the end, without wanting to leave."*
Item 2	Most of the participants did not demonstrate *"having doubts about student retention"*, since *"most of them are currently working in their institutional places with retention by ordinance and priority in their various jobs as nursing faculty." A* female participant of the study stated, "I have no doubts, but if it is a complex situation, I go to the person designated in retention for guidance."
Item 3	Using the terms of comparison with the indicative scale of "majority, minority, half, or none," they will express themselves as to how many students they retain in the courses they offer. Participants expressed that they *"retain the majority of their students in their courses."* A female participant in the study verbalized, *"My retention was very high, only one or two of them did not finish. So, I manage to retain most of them".*
Item 4	For the terms of the scale (majority, minority, half, or none) most of the participants opted to *"express themselves in percentages of retention per course"* offered at the end of the

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	semester, trimester, or bimester depending on the study option offered by the educational institution they work for.
Item 5	The majority of the nursing faculty participating in this study use various strategies to retain their students, such as female participant in the verbalized study: *"The first day of class I interview them, I meet them, I see their needs, I give them a pre-test, either verbal or written to know where they are at in order to go from the lowest level of learning to achieve the level of analysis and learning that I want to have in my classroom to meet the objectives of the course."*
	"The first thing I do on the first day is to observe the group, I go to each one asking them key questions, such as if they work, where they live, who brings them to the university, if they have a family member who is a nurse, why they want to be nurses, among others. Then I leave them open that if they want to tell me something else in private they can come at the end of the class, I give them my cell phone number for any emergency, I make the classes interactive, depending on each group, I have younger groups and with laghter I have other more adults or with some kind of experience already in health. Something that attracts them a lot is that I tell them stories of things that happened to me or if not, I make up situations that could happen in the hospital and I pretend that it was me as a nurse that happened to me... from there I ask them and if it had been you, what would you do, and I raise their level of analysis and relaxation in the course."
Item 6	Regarding the importance of student retention all participants indicated that they expose: Male study participant verbalized: "that their job or contract renewal depends on the retention of their students." Regarding student retention they expressed, *"it is a fundamental criterion of their evaluation by their employers for the renewal of their contract."* (Female study participant).
Item 7	The participating faculty expressed "that most go through various difficulties in retaining their students due to different factors faced by students in the Nursing Program." Among these they mentioned:
	A female participant of the study verbalized *"that the student is often not motivated and is overwhelmed with many questions and too long works without measuring the capacity and knowledge of the levels of difficulty of each course".* Sometimes not everyone has the intellectual capacity for this profession, they need to be humanistic and understand the long working days that await them. If a student identifies that they cannot handle the content or simply are not good at the science, mathematics, and humanism involved in this profession, they should be identified early on and directed to other study options. Nursing is not for everyone and that makes students to have and lose them after a clinical practice for fundamentals that change diapers, bathe, and cure ulcers. A great part of them cannot carry out these tasks because they should not be finishing a nursing career.
	Male participant verbalized, *"Because sometimes our work is not respected, there is a bureaucracy in the institutions that regulate or regulate us and that makes it difficult to achieve. No one is supposed to change the grade given by the teacher to a student and it bothers me when someone comes with more position of us to ask because I take away points in spelling, content, and other areas that that is not what is going to be performed in the hospital, they do not realize that education involves other areas that are not giving medication and a complete of a whole. I understand that academic freedom must be present and no one should be able to control grading and evaluation decisions unless there are pre-existing situations with the teacher or the student, many times it is the student who thinks he had all A's in school and in the university as well, the format changes, the objectives, and styles."*
Item 8	Most of the participants emphasized that "any time you can lose a student." They agreed that the biggest factor is "lack of motivation during their first semester or their first classes." Other participants expressed *"that a student can be lost in the summer semester since the modality usually offers in one semester or in two months everything that is offered in one semester."*
	A female participant in the study verbalized, *"Summer is the busy season with little time for learning. Most students opt to drop out in my opinion and analysis in all these years of*

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	teaching. It is difficult to tell a student that what was offered in 18 weeks in one semester they will have in 18 straight weeks or even in 9 straight weeks every day."
Item 9	Most of the participants agreed that the *"greater the retention of students, the more financial support institutions are provided to improve their infrastructure, payroll, technology, purchase of books and other supplies."* The more students, the participants indicated*, "the more opportunities the educational institution will be able to create to keep its employees employed, acquire new resources to offer better strategies, more training to faculty and staff, and other members of the institution."*
Item 10	The majority of the study participants answered that student retention does not affect them. While the minority expressed that sometimes the institution demands a retention percentage per educational program and *"it is a little frustrating"* because many times *"they do not manage to retain students until the end of the course."* They expressed that there are several situations that they express with some courses offered to retain their students, *but they* "are not *really* affected by whether they finish or not, depending on whether the educational institution is private or public." Female participant verbalized, *"It does not affect me, but in the clinical areas it is difficult to maintain retention due to absences or poor mastery of skills".* "If they don't meet the hours and standards, I can't retain them because they are recommended to withdraw from the enrolled course or repeat the course. It is not fair to pass a student without the skills and objectives of the course."
Item 11	Most of the participants in the study expressed that student retention often becomes *"an obligation and ceases to be a privilege for a student who really needs to be retained in the institution"* because of a situation that merits being retained. The key word of the majority of the participants in the study was *"that the institution takes away the authority of the decision to retain or not the student",* which many times they expressed that the institution requires them to retain "the student who really does not have the capacity or does not deserve to stay to finish the course due to various non-compliances". The minority stated that it is a new method, *"that helps them to keep their students but that they urgently need to be trained on retention, offered aids, strategies and workshops to be able to meet the demands of many of the educational institutions."*
Item 12	Most of the participants in the study stated that having good student retention is important and beneficial for educational institutions. Most of them express that in some way they are categorized in their institution *"as successful or good teachers,"* "provide them with pride," motivate their students, and contributed to their students' success. The minority on the other hand state *that "having good student retention helps them to have a contract renewal or the difficulties that the course they are offering brings."*
Item 13	The consequences as answered by the majority of faculty is that many *"educational institutions penalize them for not retaining a number of students in their courses,"* while the minority stated that not retaining their students *"makes their program not promoted"* or *"literally not marketed,"* *"does not reach the numbers of students needed in the program's enrollment,"* and *"will not help their program prove in the work field that they are good."* Among the penalties participants mentioned for not retaining their students were *"not renewing their contracts,"* *"no recommendations as faculty who prove to retain their students,"* *"considered them inflexible among others."*
Item 14	The faculty participants mostly expressed that the best strategy "is communication," *"getting to know the student*," "interviewing the student," and *"getting to know the student's needs."* Also, most agreed that bringing their experiences as nursing professionals either in a hospital or any other nursing setting to their classes *"helped them to broaden the analysis,"* *"to feel that the student could better understand the situation or disease they are discussing in class."* Bringing experiences helps them greatly *"to motivate the student"* so that they can remember it in their exam and clinical area.

Discussion

Given the magnitude of the phenomenon of student retention in P.R., many educational institutions have been affected and more so with the changes triggered by the Pandemic, which led many institutions to acquire new ways of offering their courses. Many institutions reported in the different media of the country that they had to take measures to reduce working hours, dismiss employees, and close departments, among other aspects due to the low enrollment and retention of their students until the end of their courses or professional careers. In terms of the results obtained in this study, most of the participating faculty were able to clearly articulate what student retention means to them.

Student retention for most of the participants in the study was a type of strategy, which they use according to their group or students to keep them until the end of the course or career. This definition is consistent with what is described in the literature on this concept and involves the strategies that are employed by the institution to convince the student to remain in the institution and achieve the completion of their professional goals. The faculty participating in the study shared various strategies used to retain students in their courses in which most of them agreed on the importance of getting to know their students in order to identify their needs; group observation was another strategy presented by most of the participants in this study. Likewise, the most used strategy to keep their students encouraged in their courses was the implementation of sharing their experiences and situations that happened to them through their various engagements as nurses in different structured or unstructured scenarios.

Using the skills lab more frequently helped them to keep their students motivated to continue learning and feel closer to the goal of finishing their professional careers. Within this study, as a researcher, I was very impressed by the part of the study where several physicians expressed that in some of their jobs, the renewal of their contract depends on their retention. This is an alarming fact because we do not always have students who meet all the competencies, skills, and theoretical content among other factors to achieve their goal of finishing their careers. We must be aware that we will not always have students who can finish their course with favorable grades, but as physicians we must have the interest and tools to provide an excellent education in order to graduate nurses with the knowledge, skills, and competencies required by the regulations of the profession. The faculty should be aware and have a good planning of the lessons to offer to the students according to the participants of the study as diverse strategies or methods to evaluate such as diversity in the exams as pairing, choose, mention, questions maintain a variation and not be very repetitive since we have diversity in the learning of the students. We must be strategic and use these diverse strategies in order to retain students more effectively without affecting the quality of instruction.

During the study, it was possible to identify, through some of the faculty members participating in the study, the institutional demands that they expressed through this study to be able to comply with the retention of their students, which many of them understood were not fair and affected the quality of teaching or the commitment of the students with the decision to study and obtain the competencies required by the study curriculum. On the other hand, the lack or need faced by the physicians participating in the study in terms of resources at the educational level such as workshops, facilities, personnel, among others, to work the

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situation of retention in their jobs in a more efficient way was studied. As a result of this study, it is understood that even the faculty needs more support from the institution to be able to put into practice the various strategies that have been identified as effective in retaining students until the end of their professional studies.

Strengths and limitations

As in most research work there is a great variety, situations and diversities that make the limitations of the study that was investigated. For this work was no exception, it is worth noting that in this study I can conclude that within its limitations it moves me to investigate more about the problem because at the same time I emphasize that not only the retention of students lies in only retention strategies to retain students to finish their course if not this is a line part of the problem, but not the complete solution to the problem of student retention. Educational strategies will help faculty to improve their strategies and organize policies, protocols, or policies and combine them with content but not to achieve 100% student retention. Educational strategies to retain students play an important role in student retention, but they are not the only important element in allowing a student to remain at the institution or in their program of choice.

Among the limitations was the diversity of academic levels offered by the physicians participating in the study. Currently, nursing is offered in Puerto Rico as practical, associate, baccalaureate, master's, and doctoral degrees. By having participants offering different courses, the strategies used to retain their students until completion were diverse, although some were repetitive and of vital importance at the time of retaining students. Another limitation of this study in the same line that I can mention in this study was the academic level they teach, also teachers who offer several levels at the same time should not participate. Since they fail to identify or recreate exactly the scene if it was a good strategy or not according to the level of study offered to the student. For a next study I would focus only on a specific grade and not on all the existing ones. I can consider as a limitation of the study the faculty's ability to generalize the situation of retention, having samples of public and private sector faculty, having faculty that offer courses in different institutions for being lecturer or part-time faculty, and having regular faculty, i.e., full time.

Another limitation of this study was whether the faculty participating in the study worked for the private and public sector or public only or private only. Working in the public or private sector makes a big difference in how the strategies, efforts, goals of the educational institution are worked out and how the situations of the institution, the student, and the faculty are handled. In a next study in one of the exclusion criteria I would select faculty from only one sector of employment, or I would conduct a study comparing the strategies used by a professor in the private system versus the one in the public system. On a future occasion, I would carry out a comparison of the public and private systems since the requirements for these are different. Another limitation identified in this study is whether the teacher was full-time or part-time, as well as whether he/she had two jobs in different places related to education. As a limitation of the study is that the exclusion criteria were very open. On a next occasion I would make them more closed to better analyze the problem and the phenomenon of retention of a specific area since it was comprehensive of the offerings of the nursing faculty, and I would have liked to be more specific or limited. I understand that these details should be taken into consideration when doing any other study that has to do with strategies

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to retain students. Since as a researcher I was open-minded in the selection of participants, the requirements to participate in this research study should have been more limited. In conclusion, limiting the requirements for participation could help me to better analyze, study, compare, and develop my research study in order to contribute more effectively, accurately, and redundantly to student retention strategies without affecting the quality of nursing education at a specific level of study.

Conclusions

The findings compiled in this study reflect that nursing faculty are willing to retain their students, use a variety of strategies, and believe faithfully in getting to know their students before they begin working on any strategies to achieve retention. Getting to know their student to determine their strengths and weaknesses is one of the most commonly used retention strategies by the study participants. The strategy most used by the study participants was getting to know the student to work on their needs. This has helped the participants of the study to achieve retention in their courses has been of great help to them as they verbalized through the interview conducted to learn more about what is the best strategy for student retention in nursing programs. These participants give a lot of positive reinforcement using the experiences of their professional area as nurses, according to what they said. These experiences or clinical situations that they experienced on a daily basis in their past work scenarios greatly help the student, according to what they verbalized, since it motivates them, broadens their knowledge, they work on a situation, and through these they can apply the content to make a complete learning process and not a passing one.

Schools require greater connection with students to motivate and captivate them to learn since they are digital natives, i.e., they are born already immersed in the era of digitalization. Teacher updating in communication and information technologies is a dual action task that should be coordinated by school directors, in addition to being sought by the teachers themselves as part of the updating of their knowledge. The introduction of recreational activities, demonstrative practices, among others, can make the difference between the student before deciding to drop out of the nursing career.

It is important that these students who apply these retention strategies and successfully complete their professional career will be revalidating to practice their professional career as nurses. These situations of real or hypothetical clinical cases that they share with their students is a very good retention strategy, according to what they said, since it will help them complete the challenge of successfully revalidating. It was also found through this study that some of the physicians participating in this research study agree that retention is an essential part of the institution's improvements, but their contract renewal assigned course load that they could offer in the future could be affected if they do not retain the percentage established in their courses in the educational institution in which they work.

The quality of teaching should not be affected by any situation of retaining students. It is understood that each practitioner must exercise his role and maintain his commitment to impact in substantial and complete knowledge to each of his students enrolled in his course. Nursing professionals will be the ones in charge of the health of the people, the country, and the world. In conclusion, through this chapter of this research study we can affirm that the practitioner despite knowing the term retention and having a good retention rate in their

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courses needs more knowledge to manage strategies and situations of the most complicated students in the classroom. In this study, according to the findings the faculty, showed that they need to learn to manage strategies for students who are affected most of the time with situations that do not allow them to continue attending full time to their courses or finish with the classroom content, demonstrate the responsibility and competencies required in a work environment or the total fulfillment of the objectives.

According to these results, we validate the need for nursing professionals to apply strategies to educational workshops, evaluate the needs they face with students, as well as to know that there are institutions that require them to retain students without having sufficient criteria to remain until the end of the course.

This research will help faculty, administrators, and lecturers who work every day to improve retention in their educational institutions. It can be finally concluded that retention does not fall on the practitioner as a whole if there are no other factors that fall on the student, the campus, the technology, and the environment that affect the student's permanence until the end of the course.

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EVALUATION OF THE SATISFACTION INDEX OF TEACHERS PARTICIPATING IN THE ENTREPRENEURIAL EDUCATION COURSE: YOUNG ENTREPRENEURS. FIRST STEPS OF SEBRAE IN PUBLIC SCHOOLS OF THE STATE OF RONDÔNIA

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Abstract: At every moment, society changes its culture, its customs, its ways of interpreting, seeing and analyzing, and these transformations are also present in schools. Entrepreneurship according to Sebrae (2018, p. 3), can be a great ally in education, contributing to the development of the locality and entrepreneurial culture in the region and stimulating in students the formation of transforming agents of society. This article aims to analyze the index of satisfaction of entrepreneurial education in elementary school teachers, through the program Young Entrepreneurs-First Steps, regarding the practical application of the program with the students involved in the project. This is a qualitative descriptive survey, with field research, whose sample was composed of 245 teachers from 06 cities in the state of Rondônia. The results were based on the demonstration that the teachers and students involved in the project presented some entrepreneurial characteristics, in addition to the manifestation of entrepreneurial spirit. Regarding Methodologies, it should be noted that with the introduction of digital information and communication technologies (TDIC), it has significantly changed the dynamics in the classroom of analog models, since students are in the digital model. The course has had a positive effect on teachers and students who continue to demonstrate entrepreneurial spirit. Related With the integration of digital technologies in pedagogical activities, we can use Blended Learning or hybrid teaching. In this model, the activities are divided between classroom activities and teaching that use online resources with distance learning activities.

Keywords: Teacher training, learning, investigation, Social Sciences, sociocultural environment.

AVALIAÇÃO DO ÍNDICE DE SATISFAÇÃO DOS PROFESSORES PARTICIPANTES DO CURSO EDUCAÇÃO EMPREENDEDORA: JOVENS EMPREENDEDORES. PRIMEIROS PASSOS DO SEBRAE EM ESCOLAS PÚBLICAS DO ESTADO DE RONDÔNIA

Resumo. As mudanças sociais ocorrem cotidianamente, a cultura, os costumes, as formas de interpretar, ver e analisar estão em constante transformação para acompanhar os novos modelos que se refletem dentro das escolas. O Empreendedorismo de acordo com o Sebrae (2018, p. 3), pode ser um grande aliado na educação, contribuindo para o desenvolvimento da localidade e da cultura empreendedora na região e estimulando nos alunos a formação de agentes transformadores da sociedade. Este artigo tem como objetivo analisar o índice de satisfação da educação empreendedora em professores do ensino fundamental, por meio do programa Jovens Empreendedores-Primeiros Passos, quanto a aplicação prática do programa com os alunos envolvidos no projeto. Trata-se de uma pesquisa, quali-quantitativa descritiva, com pesquisa de campo, cuja amostra foi composta por 245 professores de 06 cidades do estado de Rondônia. Os resultados pautaram-se na demonstração que os professores e alunos envolvidos no projeto, apresentaram algumas características empreendedoras, além da manifestação de espírito empreendedor. Com relação a Metodologia destaca-se que a introdução das tecnologias digitais de informação e comunicação (TDIC) alterou significativamente a dinâmica nas salas de aula de modelos analógicos, já que os alunos estão no modelo digital. O curso teve um efeito positivo nos professores e nos alunos que continuam a demonstrar o espírito empreendedor. Com relação a integração das tecnologias digitais nas atividades pedagógicas, pode-se utilizar o *blended learning* ou ensino híbrido. Neste modelo, as atividades são divididas entre presenciais em sala de aula e ensino que utilizam recursos online com ensino à distância.

Palavras-chave: Formação de professores, aprendizagem, investigação, Ciências Sociais, ambiente sociocultural.

EVALUACÍON DEL ÍNDICE DE SATISFACION DE LOS PROFESSORES PARTICIPANTES DEL CURSO EDUCACIÓN EMPRENDEDORA: JÓVENES EMPRENDEDORES. PRIMEROS PASOS DE SEBRAE EN ESCUELAS PÚBLICAS DEL ESTADO DE RONDÔNIA

Resumen. Los cambios sociales ocurren cotidianamente; la cultura, las costumbres, las formas de interpretar, ver y analizar se transforman para acompañar los nuevos modelos que se reflejan dentro de las escuelas. El espíritu empresarial, de acuerdo con el Sebrae (2018, p. 3), puede ser un gran aliado en la educación, contribuyendo al desarrollo de la localidad y la cultura emprendedora en la región además de estimular en los alumnos la formación de agentes transformadores de la sociedad. Este artículo tiene como objetivo analizar el índice de satisfacción de la educación emprendedora en profesores de la enseñanza primaria a través del programa Jóvenes Empreendedores-Primeiros Passos, respecto a la aplicación práctica del programa con os alumnos involucrados en el proyecto. Tratase de un estudio cualitativo descriptivo con trabajo de campos. La amuestra fue compuesta por 245 profesores de 06 ciudades del estado de Rondônia. Los resultados se orientaron en la demostración que los profesores y alumnos involucrados en el proyecto presentaron algunas características emprendedoras, además de la manifestación de espíritu emprendedor. Con relación a Metodologías se destaca que con la introducción de las tecnologías digitales de información y comunicación (TIC) ha cambiado significativamente en la dinámica en las aulas de modelos analógicos, ya que los alumnos están en el modelo digital. El curso ha tenido un efecto positivo en profesores y alumnos que siguen demostrando el espíritu emprendedor. Con relación a la integración de las tecnologías digitales en las actividades pedagógicas, se puede utilizar el Blended Learning o enseñanza híbrida. En este modelo, las actividades se dividen entre actividades presenciales en aula y enseñanza que utilizan recursos online con actividades de enseñanza a distancia.

Palabras clave: Formación de profesores, aprendizaje, investigación, Ciencias Sociales, ambiente sociocultural.

Introduction

Entrepreneurship: Society, in constant movement, changes daily; and culture, customs, ways of interpreting, seeing, and analyzing undergo transformations to keep up with the new models. For Scavassa and Santos and Campos (2018, p. 91), social, economic, and cultural changes in the world indicate the arrival of new paradigms of consumption, behaviors, and direction in both the cultural and socioeconomic spheres. Therefore, it is necessary to take young people to know and live experiences so that they are prepared for the times to come and produce good fruits in the sense of expanding knowledge and creating opportunities that allow them to succeed.

In this sense, the teaching of entrepreneurship comes to support these future professionals. Therefore, knowing the meaning of entrepreneurship is to start thinking about being different. Entrepreneurship, according to Sebrae (2018, p. 3) can be a great ally in education, contributing to the development of the locality and the entrepreneurial culture in the region and stimulating the formation of transforming agents of society. According to Zunini (Exame PME, 2016, p. 3), North American children begin to learn the first notions of entrepreneurship from a very young age, developing the entrepreneurial spirit from an early age.

In schools, the teaching of entrepreneurship assumes a challenging aspect by leading the student to want to learn new competencies, which offers tools for the acquisition, transfer, and accumulation of the new knowledge and skills. Scavassa & Santos and Campos (2018, p.93) point out that even in regions of extreme poverty, Entrepreneurship Education can have a positive effect on the population, bringing development and generation of a new mentality, as well as the creation of new businesses.

Entrepreneurship can be described as the ability to design and see beyond. According to Houaiss (2009, p.252), it is the ability or capacity that a person has to design, manage, and develop activities, projects, or businesses. McClelland (1968, p. 232) in his speech explains that it is necessary to rescue the figure of the entrepreneur who takes risks. Because to be an entrepreneurial person is to have the ability to take one's own initiatives, to possess a fertile imagination in the sense of creating new models, adapting them and transforming them into companies or businesses. Drucker (2016, p. 87) analyzes entrepreneurship under the prism of management that defends the idea of Management by Objectives, giving lessons to entrepreneurs by stating that objectives must be clearly defined.

The term "entrepreneur", according to Cerqueira, Santos, Leite, & Fonseca (2014), is of French origin - "entrepreneur" - and refers to someone who takes a risk and starts something new. Despite its simplicity, it is a good start to understand who can be considered an entrepreneur (Dornelas, 2012).

Business education

According to da Silva (2018, p. 121), several authors, such as Emmendoerfer, 2000; Santos, 2013; Lopes, 2010; Lima, 2008, affirm that entrepreneurship is not a genuinely born capacity but arises from the individual who develops this characteristic according to the

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environment in which he lives, from the education received, and from his experiences throughout life. Mcclelland (1972) apud Silva (2018, p. 121) focused on a remarkable study on the entrepreneurial profile. David McClelland attributed a strong weight to cultural issues by associating children's stories to the North American entrepreneurial potential

For Moreira Tavares, Luiz de Moura, Nunes Alves (2013) it is not only in the USA that entrepreneurship education has developed, but also in Europe, Asia, Australia and New Zealand where it has generated growth, innovation, economic development. In Brazil, however, this study is in its infancy, so it is important to rethink Brazilian education with a view to spreading entrepreneurial culture.

In education, an important aspect to take into account are the tools and the way of teaching entrepreneurship within the school. Therefore, according to Nazareth, Souza, Leite, Coqueiro (2016), entrepreneurial education aims at the differentiated formation of the individual in which the innovative, creative and proactive spirit will be stimulated, preparing the person for an adequate professional and personal development.

According to Lopes (2010), the objectives of entrepreneurship education are as follows.

- Raise awareness about entrepreneurship and entrepreneurial careers, sowing seeds for the future.
- Influence/develop entrepreneurial attitudes, skills, and behaviors.
- Develop personal qualities related to the skills needed in the modern world: creativity, risk-taking, and responsibility.
- Encourage and develop entrepreneurs.
- Stimulate the creation of companies/new initiatives, supporting their development.
- Develop knowledge, techniques, and skills focused on the business world and necessary for the creation of a company.
- Help entrepreneurs and companies, through knowledge and tools, to improve their competitiveness.

As can be seen, those who work with entrepreneurship education must be aware of their role, remembering that it is not enough to teach about entrepreneurship, but it is necessary that their students learn to behave in an entrepreneurial way, focusing on the individual because through the demonstration of such behaviors one learns how to approach a project or business.

Nazareth, Souza, Leite, Coqueiro (2016) discuss that the idea that entrepreneurship education is related to the creation of new businesses is wrong because this type of education aims to improve people as human beings, strengthening and developing skills, attitudes, creativity and generating new knowledge. This allows the individual to develop his or her potential and act appropriately, taking advantage of the opportunities that arise. On the other hand, the tools used to teach entrepreneurship at school are practical, interactive, and constructive activities, that is, the student learns by doing.

It is important to highlight the vision of the European Community (EC), which since 2003 has been emphasizing the importance of entrepreneurship education since it understands

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that entrepreneurship is the basis for the social and economic development of countries, especially in times of new technologies where labor is being replaced by machinery.

According to Lopes (2017), "the earlier the education is offered, the better, because it is in primary schools that the entrepreneurial mindset is formed, and at the higher level the main objective of EE would be to develop entrepreneurial skills (EUROPEAN COMMISSION, 2012, p. 44)."

Ibidem Lopes (2017), at least one of the following elements must figure in education for it to be considered entrepreneurial:

1. Foster attitudes and skills such as initiative, creativity, risk-taking, independence, self-confidence, planning to achieve objectives, among others, which are basic to entrepreneurial mindset or behavior.
2. Broaden students' knowledge of the professional possibilities as freelancers (self-employed) and entrepreneurs.
3. Use practical methodologies in which students participate in projects or activities, outside the boundaries of the educational institution, linking them with the local community or the business world.
4. Develop basic entrepreneurial skills, knowledge on how to open and develop commercial or social activities and to enable students to create their own employment or self-manage.

It is important to emphasize that it is necessary to raise a debate on what would be the best teacher profile, what would be the condition that allows the teaching of quality entrepreneurship. Many authors defend the idea that the teacher who has had or has the experience of entrepreneurship is in a better position to talk about the subject. However, this should not be an obstacle since, if they are not or have not been entrepreneurs, they can seek an approach with entrepreneurs, reading biographies of successful entrepreneurs, how they overcame possible obstacles, learning from them, and using such information as resources in their teaching activities.

However, for Christian Henrique, Kindl da Cunha (2008), the didactic pedagogical practice for the subject requires the adequacy of the contents and the appropriate methods to achieve the objectives since the common methods of knowledge transmission of traditional teaching cannot achieve the objectives because the characteristics of entrepreneurial training require that the student learns to understand the world through communication and collaboration in the face of competitive contexts, reasoning creatively to solve problems.

Education and entrepreneurial culture in public elementary schools in the state of Rondônia

According to Oliveira (2001), the first step taken by the Portuguese to conquer the Amazonian territories was the foundation of Forte do Presépio, the nucleus of the future city of Santa María de Belém do Grão-Pará, currently Belém do Pará, in 1616. Belém became an obligatory passage for the entire interior of the Amazon, and by the Royal Charter of 1693, the Portuguese Amazon was divided into zones for the catechetical activities of the various Catholic

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religious orders and congregations. The Jesuits were responsible for the catechesis of the southern district of the Amazon River, including the Madeira, Mamoré, and Guaporé valleys.

Between 1723 and 1728, Father João Sampayo founded the village of Santo Antônio on the first of the Madeira waterfalls (Cachoeira de Santo Antônio), the first settlement on the right bank of the Madeira River, which would later be known as Porto Velho, capital of the future state of Rondônia.

Rondônia has gone through several cycles, the first of which was the rubber cycle, resulting from the demand for latex due to World War II, with the Washington Treaty of 1942, whose objective was to organize the production of latex in Brazilian lands. With the end of World War II, in 1945, the United States of America, the main buyer of Brazilian latex, drastically reduced the demand, concentrating its demands in the Malaysian rubber plantations.

Later it experienced the cycle of the Madeira Mamoré Railway which, as part of the negotiation with Bolivia, was landlocked, had to drain its production through the railroad, leaving Guajará Mirim, arriving at Porto Velho and going down the Madeira River waterway. With the construction of the BR-364 highway between Porto Velho and Abunã and the BR-425 highway between Abunã and Guajará Mirim, on July 10, 1972, the locomotives stopped blowing their whistles and were never heard again.

There was a new cycle of mining exploitation, initially of cassiterite and later of gold, when cassiterite (the base of tin) had a great decline in the international market due to the substitution of tin cans for aluminum, an easily recyclable and lightweight product. Gold, due to its predatory exploitation, being non-renewable, quickly ended its cycle, leaving a trail of environmental devastation and poverty for the vast majority of the population.

The cities of the interior, after its transformation into a state in 1982, began to concentrate on agriculture, especially coffee production with families coming from the states of Minas Gerais, Espírito Santo, and Rio Grande do Sul.

In the capital, Porto Velho, we have what is called the "contracheque economy," given the large number of federal, state, and municipal public employees.

No great importance was given to issues related to entrepreneurship or business education, since being a state with good agricultural production and favorable land, due to the large amount of rainfall, the mild climate, and the absence of bad weather, it attracted a large number of emigrants who, in the hope of having good and cheap land, were able to plant and live off the income from their production.

It was found that due to its remoteness from large centers, logistical problems, and high transportation costs, the state needed to develop an entrepreneurial spirit. Thus, the entrepreneurial education proposed by Sebrae for elementary school encourages students to seek self-knowledge, new learning, and the spirit of collectivity.

According to Lopes (2017, p. 50),

> In institutional terms, SEBRAE has set objectives related to the promotion of education and entrepreneurial culture, and has positioned itself to develop and offer educational solutions for the different levels of basic, secondary, technical, professional, and higher education, both in public and public schools. These

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solutions can be offered as extracurricular activities, complementing or integrating the curriculum. To disseminate entrepreneurial education, SEBRAE proposed, since 2013, the National Entrepreneurial Education Program (PNEE), composed of a broad portfolio of solutions for educational institutions at all levels to stimulate the development of entrepreneurial skills.

The idea is for education to act as a transformer of this subject and encourage him/her to break paradigms and develop entrepreneurial skills and behaviors.

The course for this stage of Basic Education is the Young Entrepreneurs - First Steps - JEPP, aimed at promoting education and entrepreneurial culture. The course seeks to present learning practices, considering the student's autonomy to learn, in addition to favoring the development of attributes and attitudes necessary for the management of one's own life.

This vision is in line with the four pillars of education proposed by Unesco:

- Learning to know, i.e., acquiring the tools;

- Learning to do in order to be able to act in the environment;

- Learning to live together in order to participate and cooperate with others in all human activities;

- Learning to be is an essential pathway that integrates the three previous ones.

In this way, the course, together with an environment conducive to learning, encourages the involvement of young learners in the very act of doing, thinking, and learning. These are fundamental characteristics of entrepreneurial behavior in which the student and the group to which he or she belongs recognizes that his or her contributions are important and valued.

With the pedagogical proposal of the PEC[1] for each year of elementary school through playful activities, the learning environment sensitizes students to take calculated risks, to make decisions, and to have an observant eye, so that they can identify opportunities for innovation around them, even in challenging situations.

The course Jóvenes Emprendedores - Primeros Pasos, conceived and directed by SEBRAE, aims to promote the entrepreneurial culture with children and young people from the first period of elementary school. In educational institutions, the development of the entrepreneurial culture in primary schools aims to stimulate in students the behavior of those who do not wait and make it possible, attitudes of those who are able to look for opportunities around them without waiting for them to knock on the door by encouraging child and youth protagonism. Thus, it is intended to develop self-esteem, security, action planning, teamwork, experimentation as an important learning strategy, as well as the understanding that education should be for life.

According to Martins (2010, p. 16):

We do not want to transform every child, every young student into an agent of business creation, but into individuals who can introject into their lives, after

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[1] PEC - First steps of the young entrepreneurs

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having had contact with the theory, values, attitudes, ways of perceiving the world and themselves, focused on the ability to innovate, persevere, and live in harmony with others.

The Entrepreneurship Education Program aims to lead the student from elementary school to higher education, to the knowledge of the concepts of entrepreneurship, as shown in Figure 1:

ENSINO FUNDAMENTAL	ENSINO MÉDIO	EDUCAÇÃO PROFISSIONAL	EDUCAÇÃO SUPERIOR
Jovens Empreendedores Primeiros Passos	Despertar Formação de Jovens Empreendedores Crescendo e Empreendendo Jovem Empreendedor No Campo	Disciplina de Empreendedorismo Sebrae Aprendiz Empreendedor	Disciplina de Empreendedorismo Disciplina de Empreendedorismo e Inovação Empreendedorismo Social e Negócios de Impacto Social Desafio Universitário Empreendedor Empreendedorismo em Dois Tempos Sebrae *Experience*

Figure 1. Application of entrepreneurship education at different school levels.
Note: Source: Sebrae (2017)

According to Sebrae (2017, p. 6), the goal is for this student to experience entrepreneurship in the school institution, develop their skills, behaviors, and attitudes and use them for their current and future life (personal and professional).

According to Sebrae (2017, p, 14-15), it is noted that the Jóvenes Emprendedores - Primeros Pasos (JEPP) course is composed of nine (9) independent courses, one for each primary school year. The course has a total of 235 hours and its annual workload is divided into 10 to 15 meetings, varying from 2h to 2h30min each.

The JEPP course is developed on the basis of themes, one for each year of primary school. From stories, students are encouraged to develop entrepreneurial behavior and experience the stages of a business plan. The contents are addressed through workshops that work from the perspective of environmental and social sustainability; encouraging the conscious use of natural resources; highlighting the economic-financial and social viability of recycled material; stimulating creativity in problem solving, self-knowledge and the importance of empathy and perception of the other for a productive, healthy, and happy social coexistence.

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Methodology

This is a quali-quantitative research in which the quantification of the data allows a specific approach and the quantitative aspect made it possible to generate results and control the phenomena. The qualitative approach allows interpreting and contextualizing the results in a more complete way from a holistic point of view. The research was carried out for 18 (eighteen) months, covering 7 (seven) public elementary schools, and the whole process was supervised by the Municipal Departments of Education with the advice of SEBRAE.

In the samples 245 elementary school teachers participated in the research, from 7 (seven) public schools in the state of Rondônia, Brazil distributed in the cities; object of the study, interviewed in the Period from 10/01/2019 to 01/154/2020 as can be seen in Figure2.
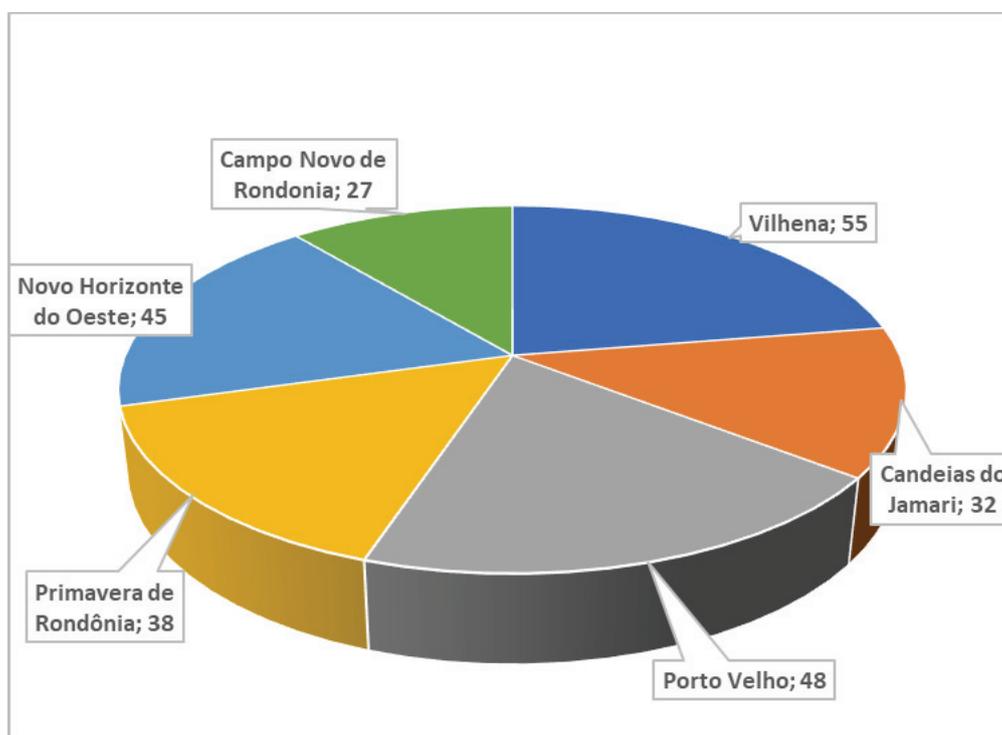
Figure 2. Number of teachers interviewed by municipality.

The course and the interviews involved 245 elementary school teachers from public schools in 6 cities in the state of Rondônia. The municipality with the largest number of teachers was Vilhena (55), followed by Porto Velho with 48 participants.

Evaluation tools

1- An evaluation questionnaire distributed to all students participating in the project with a percentage of 45% of questionnaires answered voluntarily.
2- Evaluation questionnaire applied to 100 parents of students with closed and open-ended questions to assess their satisfaction with the study, the impact of the methodology, and the results obtained with the students. The percentage of respondents was 67%.

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3-   A questionnaire was used with the 245 teachers who participated in the project. The questions involved the evaluation of the scope and level of adherence of the students to the project. All questionnaires were answered.

Data analysis

Data analysis was performed by tabulating the surveys in the Excel spreadsheet developed exclusively for this activity. For the closed questions, the LIKERT scale was used in which the respondents expressed their level of satisfaction with the project.

Each school prepares a comprehensive report on the adherence and outcome of the project, and this information is sent to the municipal secretariat of education since the adherence comes from the municipality.

SEBRAE intervenes with the entire pedagogical structure, supplying material and instructors, and the municipality, together with the municipal education secretariat, is responsible for logistics, which involves travel, lodging, and food for teachers who live outside the municipality, as well as the mobilization of directors, supervisors, and teachers to participate in the project through an awareness-raising talk.

Tabulation of the questionnaires for the closed-ended questions assessing the level of satisfaction was performed using an Excel spreadsheet with the simple mean of the responses without weight attribution.

The second question sought to know the percentage of teachers divided into their respective grades within Primary Education as shown in Figure 3.
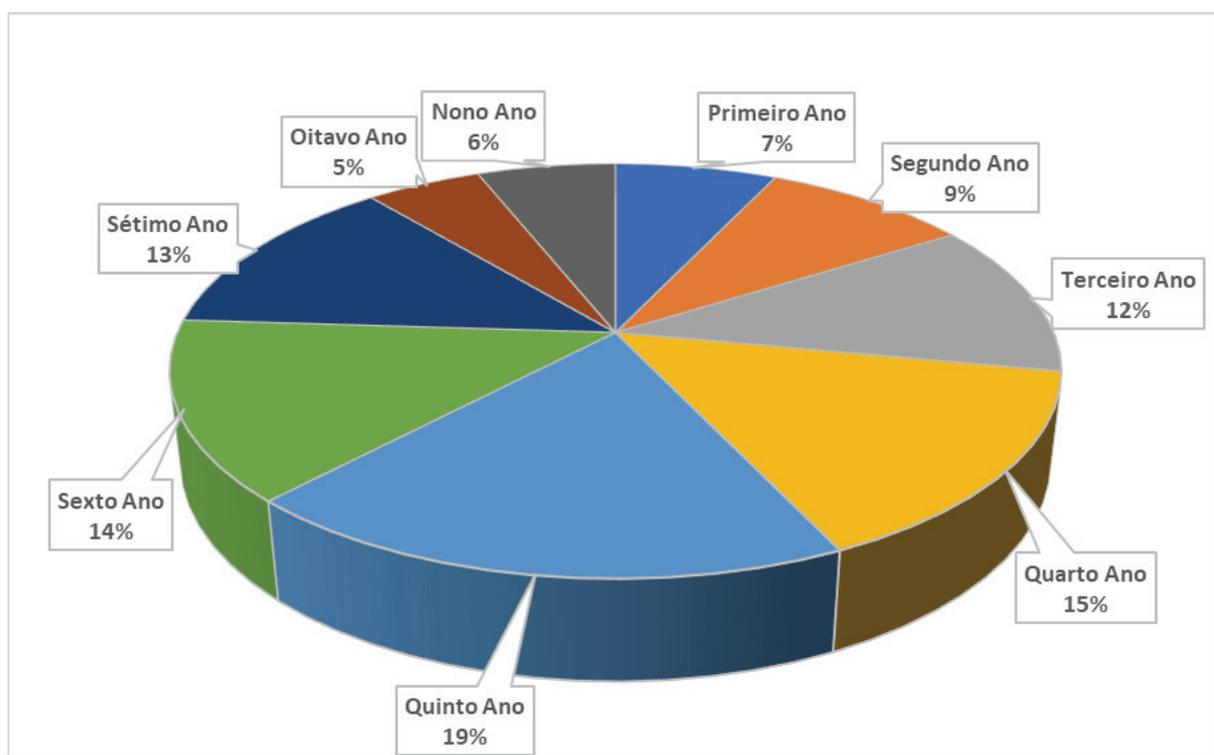
Figure 3. Percentage of teachers by grade level

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It was observed that most of the teachers interviewed belong to the fourth, fifth, sixth, and seventh grades. As in Brazil we have a division between the first fundamental years (1st to 5th grade) and the last fundamental years (6th to 9th grade), we have a low participation of teachers from the first years.

Inclusion criteria: In reference to the school's adhesion, the selection criterion was always voluntary on the part of those responsible for the school with the signing of the respective term of commitment. For the students, the criterion was to be a student of the school that joined the project and to be attending the grades included in the membership, which include the primary education grades.

Exclusion criteria: Not being a student of the center that adhered to the project and not having studied the years included in the adhesion.

Results

The third research question sought to test whether the training offered had provided teachers with better conditions for developing entrepreneurial competencies in students, according to Figure 4.
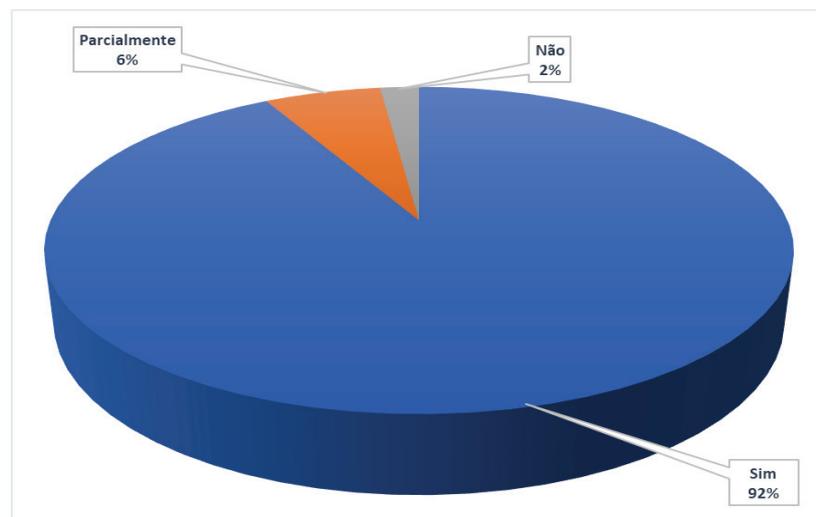
Figure 4. Teachers and the development of entrepreneurial competencies in students.

Regarding the question about the training course for teachers, 92% of the participating teachers considered it important to carry out training courses since they help the development of entrepreneurial skills of students, 6% considered it partially important, and 2% considered that the course does not contribute to the training of teachers who train entrepreneurial students. According to Rocha, Silva, Simões (2012), entrepreneurship can and should be taught and stimulated. Some public institutions, realizing the importance of the subject, have made available to school programs and activities related to the teaching of entrepreneurship where it is important to learn and do, using imagination, creativity, and innovation.

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The next question was intended to find out whether, after the students' participation in the course, they still had a predisposition to work collectively with common objectives, as shown in Figure 5.
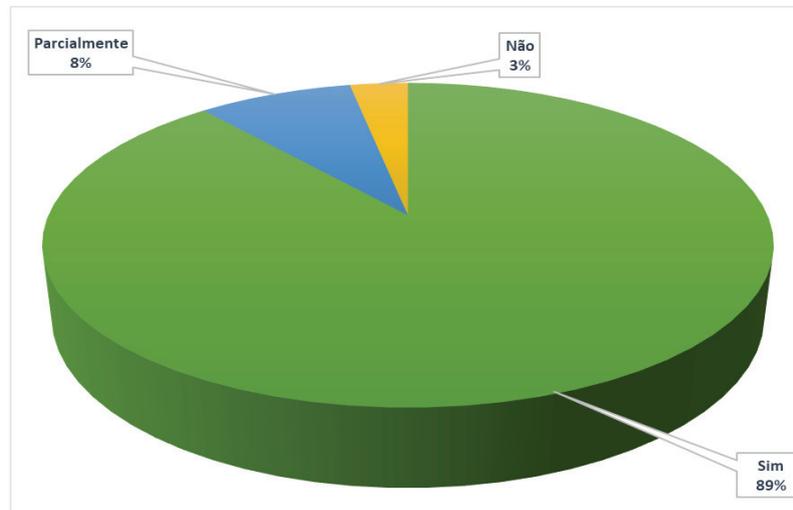
Figure 5. Do the students who have participated in the course continue to show a predisposition to work collectively with common objectives?

In terms of providing better conditions for the development of students' entrepreneurial skills, 89% of the teachers consider that the Jóvenes Emprendedores Primeros Pasos course contributed to the development of these skills, having a predisposition to carry out collective work aimed at common objectives for the group. Eight percent of the teachers partially agreed and 3% disagreed.

The next question wanted to know if the teacher felt empowered to develop entrepreneurship projects with students in the school, according to Figure 6.
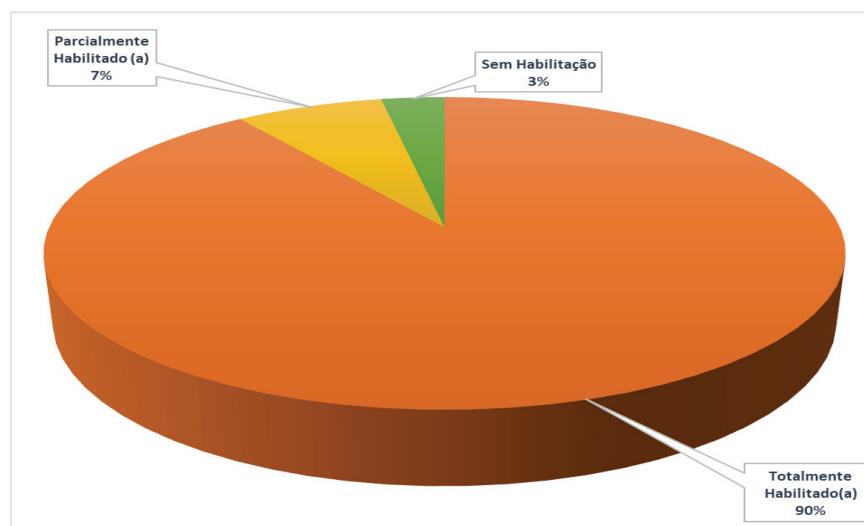
Figure 6. Do you feel able to carry out entrepreneurial projects at school with your students?

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The survey shows us that 90% of the teachers participating in the entrepreneurship course feel fully qualified to develop projects focused on entrepreneurship, 7% partially qualified, and 3% do not consider themselves capable of developing a project of this type. For Christian Henrique, Kindl da Cunha (2008), it is already recognized today that teaching entrepreneurship is an important educational innovation that stimulates a process of learning about learning. Thus, teachers need to participate in continuous training and in events that can bring innovative ideas for working with the referred theme.

The other question in the survey sought to find out the teachers' opinion of the students' ability to understand the steps they are taught according to the figure 7.
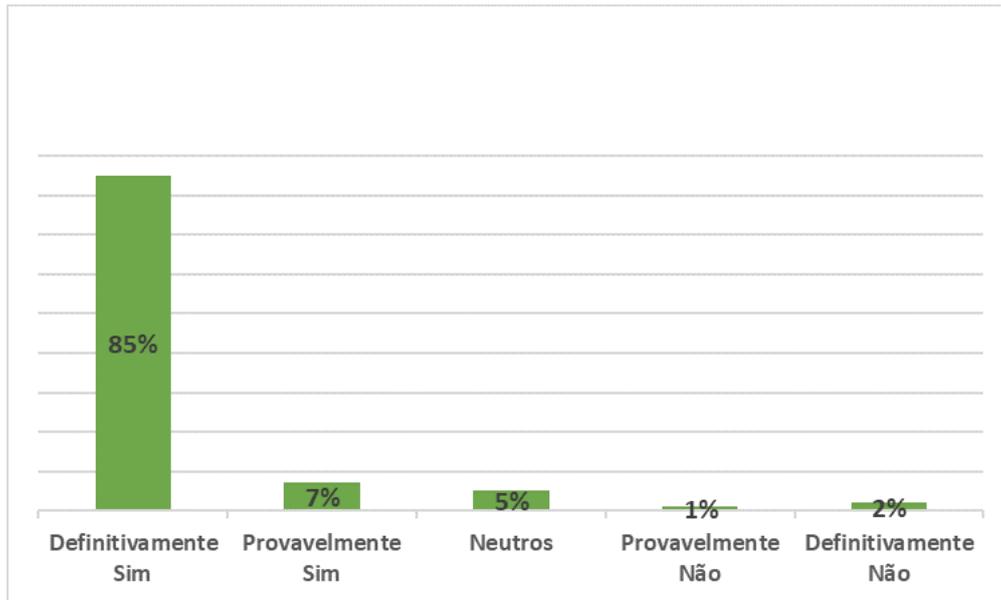
Figure 7. Are students able to understand the steps just as they are taught?

It is observed that, according to teachers, most of the 85% students are able to understand the steps in the process of teaching entrepreneurship, being competent to take ideas to career building levels; however, this does not mean that they do.

Another question in the survey sought to find out whether students express a desire to plan and engage in new ventures after the course according to Figure 8.

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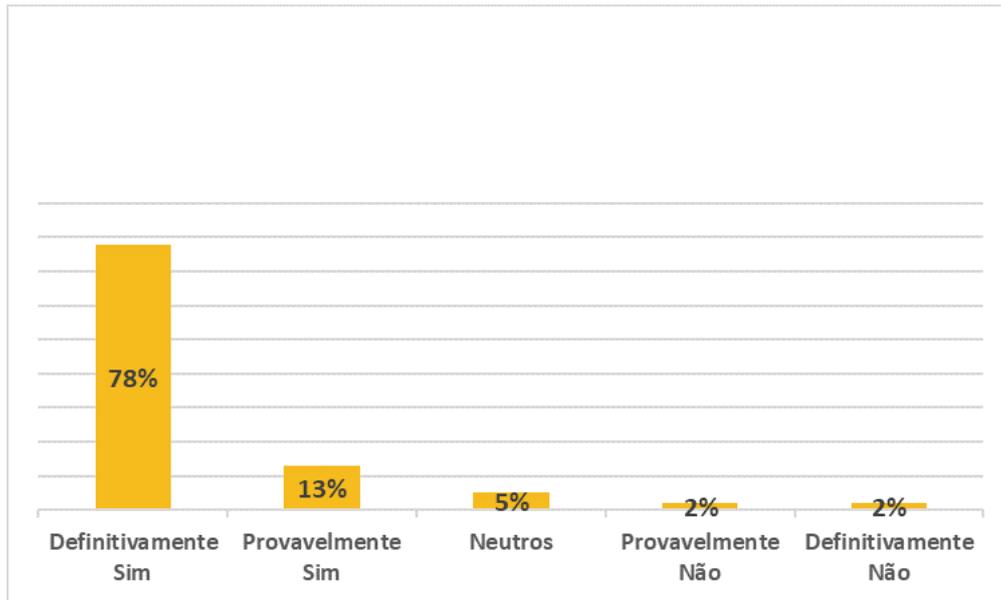
Figure 8. Do students express a desire to plan and engage in new ventures after the course?

The Entrepreneurship subject can be considered at first as a stimulus to motivate students to develop their own projects, thus 78% of these students expressed their desire to plan and carry out new enterprises, 13% probably planned new enterprises, and the remaining 9% will probably never get involved in entrepreneurial projects.

The next question of the survey wanted to know if the students presented entrepreneurial behaviors after the end of the course, as shown below in Figure 9.
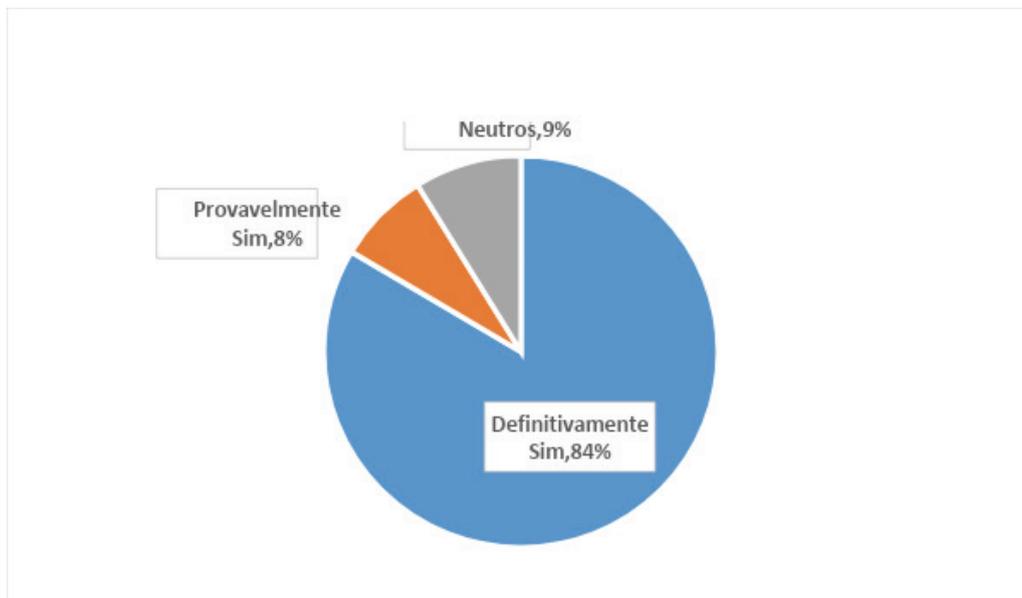
Figure 9. Students show entrepreneurial behavior after the course

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The Entrepreneurship course aims to develop specific behaviors in the participants, and at the end of the course it was observed that 84% of the students definitely present these behaviors, 8% probably presented the required behaviors, and 9% are neutral to the course. In SEBRAE's opinion, entrepreneurship goes beyond creating one's own business but means creating, being proactive, and leading. Brazilians are born entrepreneurs; they just need opportunities to create their own alternatives.

The next question wanted to know, according to the teachers' opinion, if the students had expectations of being future entrepreneurs, according to the figure 10.
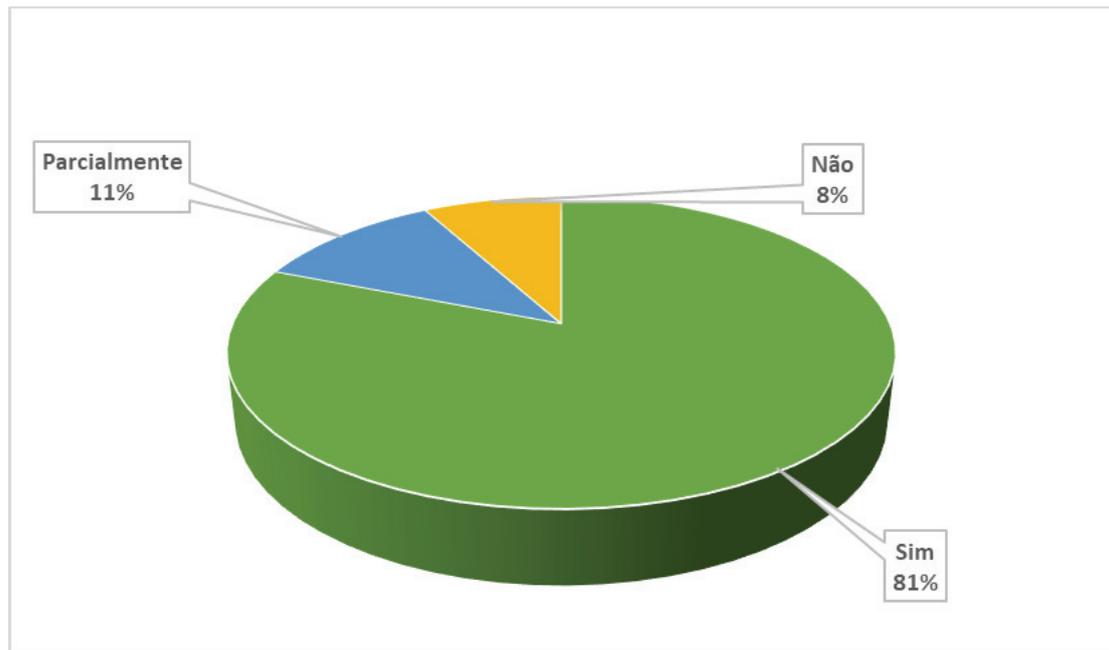
Figure 10. Students have expectations of being future entrepreneurs

Many students, 81%, present expectations of being future entrepreneurs, 11% have partial expectations, and 8% have no expectations; therefore, according to Greatti, Senhorini (2000), it is essential that the individual works, seeking to innovate and create new ways to perform the tasks of everyday life.

Another important question raised was whether students continue to develop the entrepreneurial culture in the school environment, according to Figure 11.

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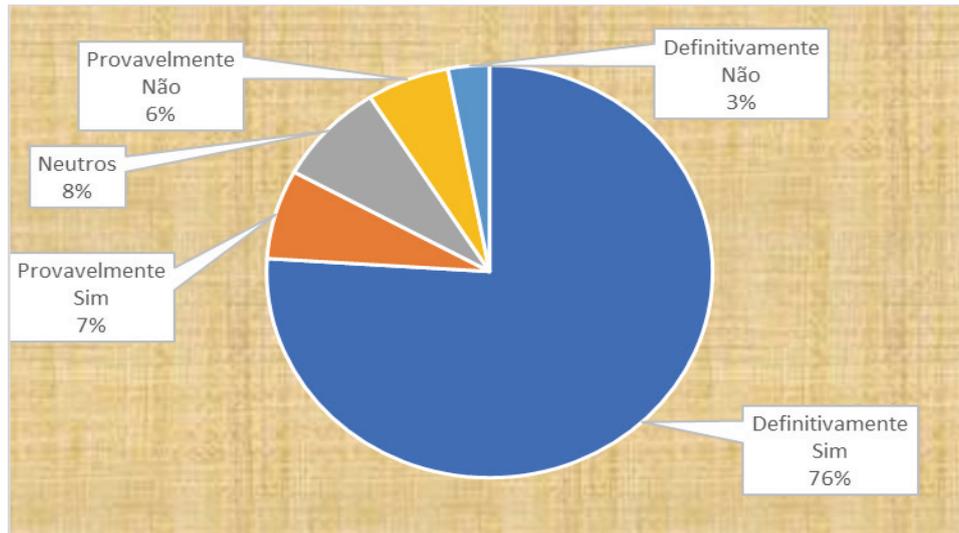
Figure 11. Students continue to develop an entrepreneurial culture in the school environment.

Six months after the implementation of the course, teachers report that 76% of the students are still developing the entrepreneurial culture, confirming the positive impact on the lives of these young people who, in some way, are demonstrating their entrepreneurial spirit.

The last question of the survey sought to find out the level of teachers' satisfaction with the Young Entrepreneurs First Steps course as shown in Figure 12.
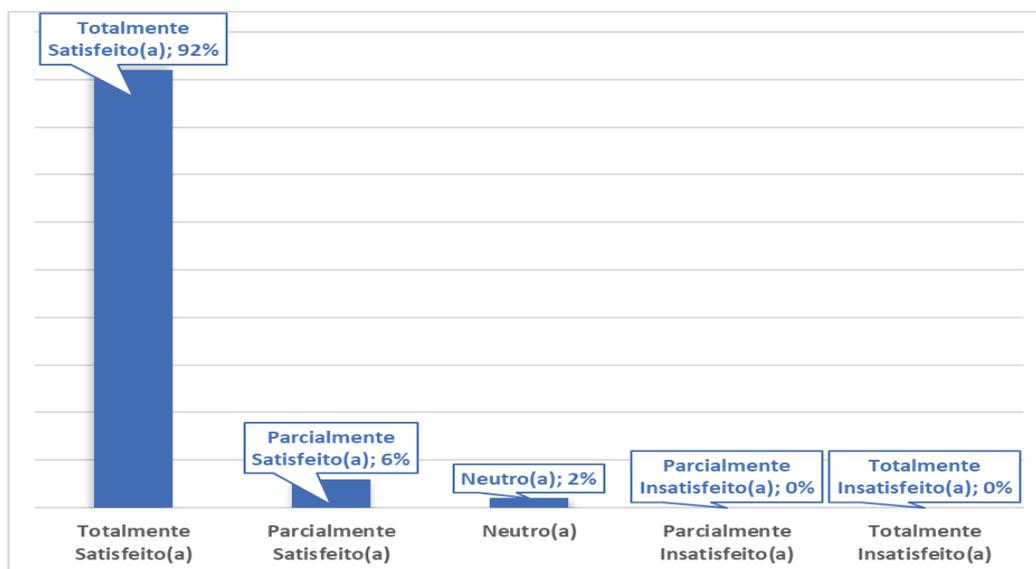
Figure 12. What is your level of satisfaction with the JEPP course?

92% of the participants in the course were satisfied, which allows us to reflect that the skills required for the development of entrepreneurship are being used by these participants for their personal and professional development, improving their learning and quality of life. Many

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teachers expressed in informal conversations their full satisfaction with the course and also that it had served to awaken their desire to become entrepreneurs.

Some cities participating in the course are very small, such as Primavera de Rondônia, Novo Horizonte do Oeste, Candeias do Jamari, and Campo Novo de Rondônia. There are not many job opportunities in these cities, and teachers need to have more than one work contract to earn enough to cover their needs. Encouraging entrepreneurship can awaken in some the possibility of earning extra income through informal jobs, such as baking cakes, sweets, and savory snacks, developing their entrepreneurial spirit.

Discussion and final considerations

Through the present study it is possible to affirm that there is progress in the implementation of the entrepreneurial culture in the municipal schools that participated in the Jóvenes Emprendedores Primeros Pasos project.

The graphs show that teachers in the first years (from 1st to 4th grade) still have some resistance to the project. However, in the later years, the students acquire a greater degree of maturity and are aware of the success of the project in other years, and in other centers there is greater involvement on the part of the teachers.

Another interesting aspect is related to the change in behavior of the students participating in the project, with a large majority showing a desire to become entrepreneurs.

A remarkable aspect is the participation of parents in the projects, encouraging their children and having a wide participation in the fairs held at the end of the project. Many parents started to become entrepreneurs (cakes, sweets, handicrafts, etc.) from the initiatives contributed by their children in the JEPP project.

The teachers interviewed, after the completion of the project, affirmed that the project achieves its objectives, and even the most skeptical ones ended up committing themselves to carry out the activities, including the dissemination of the project among the parents of the schools that did not participate in it.

The students who participated in the project demonstrated that they have some entrepreneurial characteristics that they were able to put into practice at the fairs where the products were sold. There is interest on the part of SEBRAE and the Municipalities in the sense that the project is integral in all the schools of the municipality and in all the municipalities of the state.

The project went through an evaluation process and acquired new clothes that will begin to be implemented in the second half of 2020, having a much greater focus on Entrepreneurship Education, no longer focusing on the Business Plan but on the objectives based on the four pillars of Education, which are concepts of fundamentals of education based on the Report to UNESCO of the International Commission on Education for the 21st Century, coordinated by Jacques Delors (1998 p. 89-99), which are:

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- Learning to know - It is necessary to make the act of understanding, discovering, constructing, and reconstructing knowledge pleasurable so that it is not ephemeral, so that it is sustained over time, and so that it values curiosity, autonomy, and attention on a permanent basis. It is also necessary to think about the new, to reconstruct the old, and to reinvent thinking.

- Learning to do - It is not enough to prepare oneself carefully to enter the work sector. The rapid evolution of the professions requires the individual to be able to face new work situations and to work in teams, developing a spirit of cooperation and humility in conceptual reworking and exchanges, values necessary for collective work. To have initiative and intuition, to like a certain amount of risk, to know how to communicate and resolve conflicts, and to be flexible. Learning to do implies a series of techniques to be worked on.

- Learning to live together - In today's world this is a very important learning because those who learn to live with others, to understand them, to develop the perception of interdependence, to manage conflicts, to participate in common projects, to take pleasure in common effort are valued.

- Learning to be - It is important to develop sensitivity, ethical and aesthetic sense, personal responsibility, autonomous and critical thinking, imagination, creativity, initiative, and the integral growth of the person in relation to intelligence. Learning must be integral without neglecting any of the potentialities of each individual.

For the development of future works related to Entrepreneurial Education and Teacher Training, it is recommended to deepen in the topics: Active Methodologies in Higher Education, Education 4.0, and Education Maker.

Education 4.0 takes into account the fourth industrial revolution with the use of artificial intelligence, robots, and the internet of things. The work, research, and possible discoveries are made through electronic devices and applications, games, videos, and systems that integrated to the pedagogical project of the institution lead the student to the development of skills, entrepreneurship, leaving aside the transmission of content for the construction of knowledge with effective practical value.

Education Maker, as its name suggests, is based on the concept of "Do It Yourself," allowing students to create and execute their own projects. More than ever, it fits into the concepts of entrepreneurship, as this is evidenced by behavior, by doing and not only by theories acquired through the transmission of knowledge.

With regard to active methodologies, it should be noted that with the introduction of digital information and communication technologies (ICT) there has been a significant change in classroom dynamics. It is no longer conceivable that the teacher teaches in the analog model, while his students are in the digital model. With the integration of digital technologies in pedagogical activities, *blended learning* or hybrid teaching can be used. In this model, activities are divided between face-to-face activities in the classroom and teaching through online resources with distance learning activities.

Some ways to apply the methodology are as follows:

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- Flexible: The student receives the content and information through a digital platform and receives support from the teacher in face-to-face meetings. What is flexible is the type of support given by the teacher, ranging from a little help to tutoring.
- Mixed: The student can choose to take one or several totally virtual subjects, complementing the classroom subjects, and the complementary materials are sent online.
- Enriched virtual: Most of the subjects are virtual and you can participate in some face-to-face activities such as conducting laboratory experiments.
- Rotation: The classroom can be divided into groups of projects, activities carried out in laboratories or other spaces. The student can rotate through the different face-to-face or virtual classrooms.

Another type of active methodology is the flipped classroom, in which content is made available to students through virtual platforms as they prepare for face-to-face meetings. In these meetings the students are the protagonists, participating in case studies, group discussions, laboratory experiments and, principally, problem solving.

Peer instruction is also used within active methodologies, which in a literal translation can be understood as peer instruction. Previously, the teacher provides the students with the study material, and they answer the questions through a digital platform. The teacher analyzes which questions present a higher degree of difficulty, and they are worked on in the classroom, interspersed with what is called Concept Testing, when new difficulties are exposed. This method aims to encourage the student's critical thinking, assessing learning even before the day's activities are completed.

Another form of learning is problem-based learning. The teacher presents a highly complex problem and the students through in-depth research, formulate hypotheses, search for resources, organize the steps until the complete solution of the problem presented.

Another successful strategy is Gamification when apps (applications for mobile devices) are used as tools for the development of educational content. Games can have various levels of difficulty with the accumulation of points, unlocking new content, advancing through stages, and obtaining bonuses.

A more in-depth study of the social effects of the project is recommended, analyzing the tangible and intangible benefits for the families involved. Also recommended is an ongoing study with the teachers involved in the projects both in secondary and higher education, so that based on the concepts of entrepreneurship education they can encourage their students or, perhaps, become entrepreneurs themselves.

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THE COMPETENCIES OF TEACHERS, IN THEIR UNDERGRADUATE TRAINING: A STUDY OF THE PROFESSIONAL PROFILE FOR PEDAGOGICAL ACTION IN BASIC EDUCATION, IN THE CITY OF SOACHA-COLOMBIA

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Abstract. This article collects data from research carried out in the city of Soacha, Colombia, on the skills acquired by teachers in their undergraduate training and who work at the basic education level. It aims to indicate in a mixed type analysis, the strengths and opportunities, as well as the weaknesses and threats, in reference to: the competences acquired, in a sample group of 50 teachers through instruments such as the survey and the interview, competences that are necessary in the professional profile proposed by national educational policies. The data, will let us see, a diagnosis of the percentage of competitiveness compared to the requirements of the Colombian state, which aims to achieve educational excellence by 2025, as the best country in education processes in Latin America. The study shows us the real profile of the teacher, at the undergraduate educational level and their strengths and weaknesses when it comes to professional internships, as well as the approach to the profiles requested by the state. In the same way, it will give guidelines so that the institutions that apply the methodology, can from the implementation and analysis of the proposal, project improvement plans in the training of the human resource that participates in the development of the Institutional Educational Project with which it is intended achieving higher educational quality, as well as proposing training and improvement articulations with the universities from which the teachers have graduated and that are entering the educational environment of the city of Soacha.

Keywords: competences, undergraduate, training, educational quality, teaching profile.

LAS COMPETENCIAS DE DOCENTES, EN SU FORMACIÓN DE PREGRADO: UN ESTUDIO DEL PERFIL PROFESIONAL PARA LA ACCIÓN PEDAGÓGICA EN EDUCACIÓN BÁSICA, EN LA CIUDAD DE SOACHA-COLOMBIA

Resumen. Este artículo recoge los datos de la investigación hecha en la ciudad de Soacha, Colombia, sobre las competencias que adquirieron los docentes en su formación de pregrado y que laboran en el nivel de educación básica. Pretende indicar en un análisis de tipo mixto, las fortalezas y oportunidades, así como las debilidades y amenazas, en referencia a: las competencias adquiridas, en un grupo muestra de 50 docentes a través de instrumentos como la encuesta y la entrevista, competencias que son necesarias en el perfil profesional que propone las políticas educativas nacionales. Los datos, nos dejará ver, un diagnóstico sobre el porcentaje de competitividad frente a los requerimientos del estado colombiano, el cual pretende para el año 2025 alcanzar una excelencia educativa, como mejor país en los procesos de educación en Latinoamérica. El estudio nos muestra el perfil real del docente, en el nivel educativo de pregrado y sus fortalezas y falencias a la hora de las prácticas como profesional, así como el acercamiento a los perfiles que solicita el estado. De igual modo, dará pautas para que las instituciones que apliquen la metodología, puedan desde la implementación y el análisis de la propuesta, proyectar planes de mejora en la formación del recurso humano que participa en el desarrollo del Proyecto Educativo Institucional con el cual se pretende alcanzar mayor calidad educativa, como también el proponer articulaciones formativas y de mejora, con las universidades de las cuales han egresado los docentes y que incursionan en el ambiente educativo de la ciudad de Soacha.

Palabras clave: competencias, pregrado, formación, calidad educativa, perfil docente.

Introduction

This article gathers the research conducted in the city of Soacha-Colombia to a group of teachers who work at the primary and secondary levels of the institutions administered by the Diocese of the same city, with the aim of visualizing by way of diagnosis, the competencies acquired in the undergraduate training, and to be able to specify the degree of competitiveness with regard to the profile that is requested according to the educational policies given by the state and the Colombian Ministry of National Education; since this aims to make the country the best educated in Latin America for the year 2025, i.e., to acquire a very high degree of quality in the educational processes and as a fundamental and articulating axis of education (Acuña and Pons, 2018). In the document we will find the description of the main competencies that make up the teacher profile, so that their educational work is relevant and of very high quality and, thus, achieve the objectives proposed for the year 2025.

The teaching profile for the XXI century, in accordance with global proposals and those developed in the country, offers a set of competencies that are initially presented to give context to the research carried out. From this point of view, reference is made to a conceptual theoretical framework, of the competencies proposed by some experts in the field and that guide the teaching-learning process, which is applied in Colombia. All the above, according to the Ministry of National Education and with it also, the set of parameters that surround undergraduate teacher training, the improvement plans around the shortcomings that have been had, and the analysis of the objectives of an education at the teacher level, which contribute to a relevant formative quality, both for them and for the students in their charge and, in this way, contribute to strengthen their training and propose tools for a curriculum, which help in the quality education policies of these educational communities (Acuña and Pons, 2018).

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Approach to teaching competencies from the science of education.

In the academic field, there are proposals for a teaching ideal, for a profile of the education professional that responds to the challenges that the world needs, and the academy, in these fields, always investigates what is the best and most adequate model for teachers in their professional work.

For several decades, researchers in the field have been considering the role of the teacher and his or her competencies in the world of the 21st century, as well as the need for a change in attitude and, therefore, a change in the traditional way of educating teachers.

We find authors and thinkers such as Beltrán (2003), with his studies on education; educational psychology; learning processes and strategies; strategies for conflict resolution; concept, development, and current trends in the psychology of instruction; Gardner (2005; 2017), in his research on multiple intelligences; Ricoeur (2003), in his proposals on comprehension and narration; Perkings (1992), in his book: The Intelligent School; Vygotsky (1978), and his sociocultural theory of cognitive development; Bueno (1998), and his educational research on the brain, teacher approval, visual arts, music, and physical education and brain stimulation; Coll (1995), and his psychology of education; Doyle (1986), from his ecological model in education; Mayer (1992), in his educational design for constructivist learning and the approach to multimedia learning; Ausbel (1968), in his theory of meaningful learning; Baltes (1998), in his life cycle development approach; Beltrán (2002), in his learning processes, strategies, and techniques; Galindo (2001), with his active methodologies; Kohlberg (2015), in his moral development theory; Paulov (1972), in his classical conditioning proposal; Piajet (1970), in his constructivist approach learning theory; Skiner (1965), in his operant conditioning theory; González and Escudero (1987), in their research on educational innovation; Tejada (2008), in his proposal of teaching competencies; Alonso and Gallego (2000), in their research on learning styles; Diaz (2000), in teaching strategies for meaningful learning; Porter (2008), in his proposals on the forces that move competencies.

A teacher, in his initial and continuous training, acquires competencies, i.e., a set of social, affective behaviors, as well as cognitive, psychological, sensory, and motor skills, which lead him to correctly perform his activity or profession (Calix, 2013). According to Chomsky (1985), it is from the theories of language that a concept of competence is established as the capacity and disposition for a performance and interpretation. Ruiz, M. (2011) refers with respect to competencies; five attributes which are: (1) the one referred to performance, or manifestation of competence since it is invisible in itself; (2) the one referred to the contextual in a specific way, points out that human actions are expressed in particular and specific contexts; (3) the one referred to integration, which is the ability to face novel situations and to know what, how, and when to act with the acquired knowledge; (4) that referring to leveling, which allows the learner to move from initial levels to higher levels of experience; (5) that referring to the norm, which refers to the behavioral guidelines or criteria for action that indicate how an individual should behave in a given situation.

Does the profile currently presented by universities allow for quality education? In order to answer this question (Zabala, 2007), he presents a classification as follows:

- The teacher is the animator of learning situations.
- Prepares and selects the disciplinary contents.

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- Masters communication skills, i.e., providing understandable and well-organized information and explanations.
- Knows how to handle new technologies.
- Designs the methodology and organize the activities.
- Relates familiarly with the students.
- Performs its function as a guardian.
- Develops its ability to evaluate.
- Applies his knowledge to reflect and research on the teaching he teaches.
- Identifies himself with the institution and knows how to work in a team.

Perrenoud (2004) says that the teacher will develop the competencies necessary for life and points out the following classification:

- The teacher organizes and encourages learning situations.
- Manages learning progression.
- Develops and evolves diversity care devices.
- Involves students in their learning.
- Works in teams and makes teams work together.
- Participates in the management of the school.
- Informs and involves parents in the educational process.
- Uses ICTs.
- Confronts the duties and ethical dilemmas of the profession.
- Organizes its own continuing education.

Sarmiento Díaz (2000) presents three approaches: (1) traditional pedagogy and its implications; (2) activist pedagogy; and (3) conceptual pedagogy and its implications. In this evolution of pedagogy, the teacher acquires the competencies of cooperating with students to promote their intellectual, psychomotor, and value skills, that is, seeking the student's development; helping students to form concepts and intellectual operations with which they can understand and interpret the world; being an expert in cognitive and value-attitudinal development; mastering the concepts and basic laws of the science or discipline they teach, controlling the wrong or partial concepts issued by the students, and strengthening the correct concepts.

Competencies from the science of education for a teaching profile in our context.

Competencies that help you learn to teach

According to Sarmiento (2000), the teacher is trained to know and master the components of the educational process, such as, Who learns, Who teaches, (People), What is learning for, What is teaching for, (Sense of Education), Why is learning done, Why is teaching done, (Motivations), How is learning done, How is teaching done, (Processes), What is learned, What is taught, (Concepts, contents, skills, attitudes, values, mental operations, management of multiple intelligences, etc.), Where is learning done, Where is teaching done, (Spatial, physical and digital-virtual contexts), When do we learn, When do we teach, (Spatial, physical, and digital-virtual contexts), When is it learned, When is it taught, (Temporal contexts, synchronous, and diachronic virtual contexts), What is it learned with, What is it taught with, (Resources).

Other competencies have to do with the processes it will accompany, i.e., cognitive processes, physiological processes, affective processes, methodological processes, technological processes (Sarmiento, 2000).

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The teacher will possess the skills to determine the educational factors that influence learning, both those centered on the educational context, those centered on the context of the educator and those centered on the teaching context. He/she must have a clear knowledge of the educational policies of his/her region, as well as the curriculum of the institution in which he/she works. The teacher acquires competencies in terms of innovation, its impact and management. Also, in terms of interpersonal relations, communication skills, or interpersonal relations, attitudes towards oneself, appreciation, self-esteem, and confidence; values important to the educator, attitudes towards students, expectations towards students, problem management and communication established with students, management of authority, fostering motivation, and adaptation to different individualities. Competencies, which will help the factors centered on teaching, all in terms of planning, organization, proposals, methodologies, activities, contents, evaluations, practices, transfers, and resources.

The teacher must know the development of the learner (factors of the learner that influence learning), the prenatal period, the preschool period (sensory-motor and pre-operational), the school period, the period of adolescence, young adulthood, middle age, and the period of old age. Also, to possess competencies for cognitive factors, to know the functioning of the cerebral hemispheres, vertical and lateral thinking, intelligence, perception, attention, retention, thinking, and previous knowledge; for affective factors, i.e., self-concept and self-esteem, motivation, emotions, and a last level in terms of behavioral factors (Sarmiento, 2000).

Competencies that help you teach to learn

The educational process undergoes a series of changes, and some consider learning as the central axis of this process. The teacher will have the competencies in terms of the knowledge of the different learning theories, such as those focused on the interior of the individual, those focused on the exterior, conditioning theories (classical, connectionism, behaviorism, contiguity), theories related to operant conditioning. There are also cognitive learning theories (gestalt, constructivist) and bridge theories between associative and cognitive theories, such as propositional behaviorism, social learning theories, self-management, cognitive behavioral modification, cognitive information processing theory (Sarmiento, 2000).

At this level of teaching to learn, the teacher will also possess competencies to facilitate learning, to know the types of learning, the cognitive structure of the learner, metacognition, learning strategies related to memory, learning strategies related to thinking, learning techniques (construction of concept maps, reciprocal teaching, the PQ4R method). Similarly, the competencies that have to do with skills that improve the quality of life and human development, i.e., skills that allow people to manage their own lives and live with other beings and their environment, competencies for multicultural education, cooperative learning, education in values, and eco-psychology (Sarmiento, 2000).

The Role of the Teacher and the Interpersonal Nature of Learning

Following Cooper (1999), we can indicate some general areas in which the teacher supports the student in the construction of knowledge. These areas are the following:

- Sufficiently deep and relevant theoretical knowledge about learning, development, and human behavior.
- Deployment of values and attitudes that foster learning and genuine human relationships.

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- Mastery of the contents or subjects taught.
- Control of teaching strategies that facilitate student learning and make it motivating.
- Practical personal knowledge about teaching.

Gil, Carrascosa, Furió, and Martínez-Torregrosa (1991) reflect on teacher training and its activity, with the objective of generating didactic knowledge or integrating knowledge and the result of the following didactic approaches:

- Know the subject matter to be taught.
- Know and question spontaneous teaching thinking.
- Acquire knowledge about science learning.
- Make an informed critique of the usual teaching.
- Know how to prepare activities.
- Know how to direct the activity of the students.
- Know how to evaluate.
- Utilize research and innovation in the field.

Teacher training requires that teachers become accustomed to handling a series of learning, instructional, motivational, and group management strategies, among others, in such a way that they can induce through exercises, demonstrations, clues for thinking, feedback, and others; and, in each case, consider the following points:

- The characteristics, deficiencies, and previous knowledge of the students.
- The learning task to be performed.
- The contents and study materials.
- The intentions or objectives pursued.
- Existing infrastructure and facilities.
- The meaning of the educational activity and its real value in the formation of the student.

In Rogoff's (1984) thinking, there are some general principles that characterize the teaching-learning situations, and that the teacher in his training acquires for the correct intervention in this same process:

- Provide the student with a bridge between the information he/she has (his/her previous knowledge) and the new knowledge.
- Provide the student with an overall structure for the development of the activity or the completion of the task.
- Progressively transfer control and responsibility from the teacher to the student.
- Promote a demonstration of active intervention on the part of the teacher and the student.
- Make explicitly and implicitly appear the usual forms of interrelation between teachers/adults and students/minors, which are not symmetrical, given the role of the teacher as tutor of the process.

Competencies versus multiple intelligences

It has come to be understood that human beings possess multiple intelligences, which help them to approach the object of knowledge. Gardner (2005) shows a taxonomy of them. The teacher must study and know them, in order to diagnose them in the students under his charge and be able

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to enhance them during the teaching-learning process. These intelligences indicate the way in which the individual approaches his reality and understands it and, therefore, learns from his environment through the development of them. The student, of whichever of the degrees for elementary and secondary education, will know them. These intelligences are classified in a number of eight.

Information Management Competencies

Each teacher has an area on which he/she works on his/her training. In Colombia, for training and education at the elementary and junior high school level, the teacher must handle one of the nine compulsory and fundamental areas, according to the General Education Law (Law 115): (1) natural sciences and environmental education; (2) social sciences, history, geography, political constitution, and democracy; (3) artistic education; (4) ethics and human values education; (5) physical education, recreation and sports; (6) religious education; (7) humanities, Spanish language, and foreign languages; (8) mathematics; (9) technology and computer science (Ministry of National Education [MIN], 1994, art. 23). The teacher must have information management skills and master them in order to help the student to acquire them and to help him/her in the management of the information received.

According to the Ministry of National Education, these competencies are the basic ones: scientific competencies, citizenship competencies, communicative competencies, and mathematical competencies. The scientific (natural and social) competencies favor the development of scientific thinking and allow the formation of people who are responsible for their actions, critical and reflective, based on holistic thinking, in interaction with a complex and changing context. The citizenship one's form people who can use their cognitive, emotional, and communicative skills to solve individual and social problems, in a flexible way, in the proposal of creative and innovative alternatives, in an increasingly intelligent, understanding, fair, and empathetic manner. The communicative ones, form people capable of communicating assertively (both verbally and non-verbally) as interlocutors who interpret, understand, and argue meanings, that is, to interpret, argue, and propose, taking into account the particularities of each communicative situation. Mathematics favors the ability to formulate, solve, and model reality phenomena. Communicate, reason, compare, and exercise procedures in the acquisition of knowledge, skills, attitudes, and understanding of mathematical thinking, which facilitates a flexible, effective, and meaningful performance.

Following Marzano (2005), it is necessary to take into account the dimensions of learning, which from this author's taxonomy would be: (1) positive attitudes and perceptions towards learning; (2) reasoning for the acquisition and integration of knowledge; (3), reasoning for the deepening and refinement of knowledge (comparing, classifying, inducing, deducing, analyzing errors, establishing and elaborating foundations, analyzing perspectives, creating and applying abstractions); (4) reasoning for the meaningful use of knowledge (decision making, research, experimental inquiry, problem solving, invention); (5) productive habits of mind.

Marzano and Kendall (2007 and 2008) propose a taxonomy of educational objectives. They present the domains of knowledge and systems of thought. In relation to the domains of thought, there are three levels: the domain of knowledge called information, the domain of knowledge called mental procedures, and the domain of knowledge called psychomotor procedures. In relation to

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systems of thought, we have six levels: (1) Retrieval; (2) Comprehension; (3) Analysis; (4) Knowledge location; (5) Metacognition; (6) Internal system.

Competencies in relation to the evaluation or follow-up of the teaching-learning process.

Evaluation is one of the most important actions in training and in the educational field. Today we are more aware than ever of its necessity since it indicates the what, how, why, and when of teaching and leads to making decisions to improve this process. These factors introduce a culture of evaluation. Whoever is being trained as a teacher should be aware of this environment and have the skills to carry out a correct and concrete evaluation of processes, student results, even of the curriculum itself, teaching practice, centers, and the educational system (Hussen, 1990).

The teacher must distinguish between evaluation, qualification, and measurement. They must also have a clear knowledge of the areas of evaluation, such as attitudes, skills, educational programs, didactic curricular materials, teaching practice, schools, the educational system as a whole, and evaluation itself; they must manage in their work the types of evaluation: formative, summative, global, partial, internal (self-evaluation, hetero-evaluation, co-evaluation), external, initial, procedural, final, self-reference, hetero-reference (criterial and normative).

Competence in the use of new technologies applied to education.

Teachers must be fully aware of the principles of ICT competencies, which are essential characteristics to fulfill all the processes of teacher professional development, in order to be considered aligned with the vision of our country to promote educational innovation (MIN, 2013, p. 30). These principles are:

- Relevant.
- Practical.
- Located.
- Collaborative.
- Inspiring.

  Regarding competencies (MIN, 2013, pp. 36-44), we can list the following:

- Technological competence.
- Pedagogical competence.
- Communicative competence.
- Management competence.
- Investigative competence.

  These competencies have some degrees (MIN, 2013, pp. 34-35), moments, or levels, as follows:

- Explorative.
- Level of integration.
- Moment of innovation.

  We find the digital teaching competences, which according to the definition of the National Institute of Educational Technologies and Teacher Training of Spain, a digital competence is:

> Digital competence involves the critical and confident use of Information Society technologies for work, leisure, and communication. Relying on basic ICT skills: use of computers to retrieve, evaluate, store, produce, present, and exchange information, and

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to communicate and participate in collaborative networks via the Internet (European Parliament and the Council, 2017, p. 12).

Digital competencies that every teacher should have:

- Area of information competence and information literacy (INTEFP, 2017, pp. 15-35).
- Digital content creation competency area: (INTEFP, 2017, pp. 37-45).
- Safety competency area: (INTEFP, 2017, pp. 47-55).
- Problem-solving competency area: (INTEFP, 2017, pp. 57-65).

Teaching competencies, in the context of research.

The academic and legal environment was structured, both of the state and of the municipality from where the research was proposed since in Colombia this municipality is an autonomous territory, in terms of policies and application of the general law of education and proposes its own plans and regulations in search of quality education, without omitting the guidelines of the national Ministry of Education to which every Colombian territorial entity is subject.

Country Context

What does it mean for Colombia to be the most educated country in Latin America in 2025? This is the question that the Ministry of Education and the Country's Policies have posed. This will happen if the base, which are the teachers, are well trained. The Ministry of National Education through the Colombian System of Teacher Training and Professional Development (MIN, 2018, pp. 107-108) presents a structure and organization for this training. A description is made of five objectives with their components that correspond to those formulated in the General Education Law.

The Ministry of National Education raises policies in this regard and plans a three-stage process: before, during, and after the degree. The instruments and documents presented by the Ministry show a path for further research in the different proposals, authors such as Baracaldo (2007) in his research on pedagogical knowledge; Rengifo (2014); Saavedra and Forero (2019) in 10 steps to be the most educated Colombia in 2025; Henao and Zapata (2013) in teacher training for basic education in Colombia; Aldana, Chaparro, García et al. (1996) in Colombia al filo de la oportunidad; and many more, along with some documents from the national education commission and the Ministry of Education, such as: Ten-year education plan, 2006-2016; Reflection on education in Colombia 2010-2018; Agreement for higher education 2034; public policy proposal for excellence in higher education in Colombia in the scenario of peace (2014); Rural higher education plan (2018); Quality benchmarks; all this documentation give us approaches and perspectives for a research in the formative field of the teacher of the XXI century.

In 2010, based on the guidelines established for undergraduate graduation tests, the six competencies that were formulated were reduced to three as follows (MIN, 2004, p. 8):

- Teaching.
- Training.
- Evaluate.

Particular Provincial Context

The Secretary of Education of Cundinamarca states that in 2010 a total of 6,456 teachers and teaching managers were trained in different programs. The teacher training goal was met by

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244%, with respect to the number of teachers trained, which was 9,780 in relation to the Development Plan, which was 4,000 (SEC, 2010, p. 14).

It also proposes some strategic areas (SEC, 2010, pp. 16-22) of teacher training, which are listed below:

- Curriculum design and development.
- Training in the culture of evaluation.
- Flexible models.
- Incorporation of information and communication media and technologies.
- Training for the promotion of research and innovation.
- Management improvement.
- Articulation between education and the productive sector.
- Bilingualism for competitiveness.
- Training for the development of communication skills.
- Training for a sustainable environment.
- Education based on respect for diversity.

Educational context of the Campus

The Institutional educational project aims to educate and train for science, work, and coexistence from a pedagogical model for autonomous learning, developing multiple intelligences in an environment of management and application of new technologies for the solution of problems in the social and work environment of the student.

In the process of selecting teachers' profiles for the development of this educational project, the manifestation of training in the competencies necessary for the development of the educational proposals was investigated. The new teacher is not only an instrument in the teaching-learning process but also a valuable resource, who must be helped to fulfill his function and develop his educational role, and, therefore, it is necessary to detect his competitive level.

What is the educational environment in which the educational institutions of the Diocese of Soacha find themselves and in which the teachers develop after having received their undergraduate training? Let us look at this environment of the educational legal framework of our country.

Basic education (MIN, 1994, art. 19-26), which is immediately circumscribed from preschool and early childhood education (MIN, 1994, art. 15-18), with five years of primary and four years of secondary education, and middle school education (MIN, 1994, art. 27-35), which is two years. In basic education, according to the 1994 education law, there are nine fundamental areas, as previously stated (MIN, 1994, art. 23).

In Colombia, the general law of education establishes the goals of education. Teachers do not know how to articulate them from their knowledge and skills; in their preparation there is still an emphasis on the conceptual or thematic aspects, with respect to the area they handle. The 13 purposes (MIN, 1994, art. 5) set forth in the general law (in accordance with article 67 of the National Constitution of Colombia). This article of the education law describes thirteen purposes of education.

It also proposes general and specific objectives for each educational level, both in primary and basic education (MIN, 1994, art. 19-22).

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The General Objectives of Basic Education are described in the aforementioned articles of the Education Law in a total of seven objectives**.** Likewise, there are specific objectives for basic education in the primary cycle and specific objectives for basic education in the secondary cycle**.**

National teacher profile

The Ministry of National Education has proposed sound policies. In its document on quality guidelines for bachelor's degrees in education (MIN, 2004, p. 5), it reports that various processes of reflection have been carried out in different contexts on initial and continuing teacher training programs in our country. Similarly, a broad review of national and international literature on the teacher's profile, qualities, and functions, as well as competencies and characteristics, which help to identify similarities and coherences with the competencies formulated (MIN, 2004, p. 6), was carried out:

- Know what is taught, how it is processed, and what it is taught for.
- Know how to teach discipline.
- Know how students learn and to establish the differences that affect learning.
- Know how to organize and develop learning environments.
- Know how to monitor and evaluate student progress.
- Know how to propose, develop, and evaluate educational projects.
- Know how to articulate their pedagogical practice to the contexts.
- Know how to work in a team.
- Be committed to the learning achievements of their students.
- Know how to use technological aids to enhance the learning process.
- Be committed to self-evaluation and continuous personal and institutional improvement.

Educational training proposals

The Colombian Association of Higher Education Institutions with Professional Technical and/or Technological Training (ACIET, 2016, pp. 64-66), in a commitment with the National Ministry of Education, refers that the National Education System is configured as a great opportunity for inclusion, equity, and recognition because it allows building a new history on the characteristics of Colombians, who will be trained to live in peace and achieve high levels of economic and social development. The document describes the ten fundamental reasons.

To ensure educational quality in the nation, the Ministry of National Education will also evaluate teaching performance (MIN, 2013, pp. 7-19) in the country and will, therefore, focus its evaluation on the competencies proposed in the exam that regulates the public service. The competencies to be evaluated are:

- Disciplinary.
- Pedagogical.
- Behavioral.

Recent research in the field on the subject of the research carried out.

Some research approaches have been made around the issue of the quality of education and the competencies that are needed both for teachers and to develop in the student body at the basic education levels. Among the research concerning teacher training, I could cite Villota (2016) and his scientific research article, "*research on the problems faced by the training of educators in undergraduate programs in Colombia: A State of the Art,*" where different researches in the country are collected. The research of Henao and Zapata (1994), in their article, "*Teacher training for basic*

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education in Colombia," in a legal-political context from Law 115 or general law of Education that regulates the entire educational system and that will show a contrast from that time to date.

Jurado (2016) refers to the renewal of teacher training in Colombia, points out teacher training models. Velasco (2018) in his research, exposes a series of competencies that the teacher must acquire to propose and reach the success of the curriculum. At the level of students and what they should receive, we have Barrera, Maldonado, and Rodriguez (2012). In their research, it raises some educational policies for Colombia that allow reaching educational quality in the country.

Method

A statistical analysis was designed through the collection of data in two surveys and an interview, with the perspective of diagnosing teaching competencies at the undergraduate level. The hypothesis was posed: do Colombian teachers at the elementary and junior high school levels, who work in the educational institutions of the Diocese of Soacha, acquire in their undergraduate training the necessary competencies for the performance and accompaniment of the teaching-learning processes, according to the role proposed by the Ministry of National Education and the educational environment of the XXI century?

The participants are framed in the Colombian educational environment and the sample was taken from a group of 150 teachers who work in the schools administered by the Diocese of Soacha. The sample group is of 50 teachers, with the assumptions for the selection of five teachers from each of the nine basic grades, that is, 45 teachers, discriminated by grade, one from each fundamental area of the five required by the legal system: Spanish, Social Studies, Foreign Language, Mathematics, and Natural Sciences. In addition, there is one teacher for the areas of Arts, Recreation and Sports, Religious Education and Ethics, which are common to all grades, and two teachers of Technology and Computer Science, also common to all grades, for a grand total of fifty teachers. In this way, all the areas proposed in the national educational regulations and the entire educational universe required in primary and secondary basic education were covered.

The first survey has a competency approach to the teaching profile. It analyzed 13 groups (clusters) of competencies as follows: (1) competencies with respect to the aims of education; (2) competencies with reference to the general objectives of basic education in Colombia; (3) academic management competencies; (4) administrative management competencies; (5) community management competencies; (6) leadership competencies; (7) communication and interpersonal relations competencies; (8) teamwork competencies; (9) negotiation and mediation competencies; (10) social and institutional commitment competencies; (11) initiative competencies; (12) achievement orientation competencies; (13) technology use competencies. The answers were in the options: always; almost always; sometimes; almost never; never.

The second survey was based on a survey conducted by the Pontifical University of Mexico, and questions were adapted to apply them to the context that was needed. The response form had the same five options as the first survey, and also some questions were given in multiple responses. Both surveys were applied through google forms.

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The interview was conducted virtually through the Skype platform. The data were grouped in a SWOT matrix that shows the strengths and opportunities, as well as the weaknesses and threats in relation to the competencies that were raised in the surveys.

The data analysis was carried out using the clustering method or technique with certain characteristics, i.e., the different individuals were placed in homogeneous groups, so that they are considered similar, all of them determined by having acquired the competencies being investigated in each case. SPSS and Excel were used as the base program for statistical analysis. The process was developed in four steps as follows: (1) Analysis of the research questions; (2) Cross tabulation and filtering of results; (3) analysis of numbers and percentages; (4) conclusions.

Results

In order to understand the data obtained, they will be presented in tables.

Table 1

Competencies in reference to the aims of education

Purposes	Always	Almost always	Sometimes	Almost never	Never
End 1.	48%	36%	10%	6%	---
End 2.	84%	10%	6%	---	---
End 3.	48%	40%	10%	2%	---
End 4.	66%	22%	8%	2%	2%
End 5.	44%	40%	14%	2%	---
End 6.	50%	30%	14%	6%	---
End 7.	58%	32%	10%	---	---
End 8.	56%	30%	10%	4%	---
End 9.	44%	40%	14%	2%	---
End 10.	62%	32%	6%	---	---
End 11.	44%	40%	12%	4%	---
End 12.	54%	38%	6%	2%	---
End 13.	52%	32%	16%	---	---

53.69% of the teachers are always competitive, and 33.38% are almost always competitive; 12.93% are not competitive enough.

Table 2

Competencies in reference to the general objectives of basic education

Target	Always	Almost always	Sometimes	Almost never	Never
Objective 1.	54%	26%	18%	---	2%
Objective 2.	72%	26%	---	---	2%
Objective 3.	46%	42%	10%	2%	---

Objective 4.	56%	36%	6%	2%	---
Objective 5.	34%	40%	26%	---	---
Objective 6.	68%	28%	4%	---	---

55% of teachers are at an always competitive level, and 33% are at an almost always competitive level; 12% are not competitive enough.

Table 3
Academic management skills

Competencies	Always	Almost always	With weaknesses
Content Mastery	55%	33%	12%
Organization and planning	55%	33%	12%
Pedagogical and Didactic	65.6%	28.6%	5.7%
Evaluation and learning	62.2%	33.4%	4.3%

Table 4
Administrative management skills

Competencies	Always	Almost always	With weaknesses
Use of resources	69%	26%	5%
Process monitoring	72.5%	23%	4.5%

Table 5
Community management skills

Competencies	Always	Almost always	With weaknesses
Institutional Communication	67.6%	25.6%	6.7%
Interaction-Community	61.6%	35.6%	2.7%

Table 6
Leadership Competencies

Competencies	Always	Almost always	Sometimes	Almost never	Never
Competency 1.	64%	26%	10%	---	---
Competency 2.	66%	28%	6%	---	---
Competency 3.	64%	30%	6%	---	---
Competency 4.	54%	36%	10%	---	---

62% of teachers are at an always competitive level, and 30% are at an almost always competitive level; 8% are not competitive enough.

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Table 7
Communication and interpersonal skills

Competencies	Always	Almost always	Sometimes	Almost never	Never
Competency 1.	60%	30%	10%	---	---
Competency 2.	72%	26%	2%	---	---
Competency 3.	74%	24%	2%	---	---
Competency 4.	66%	30%	4%	---	---
Competency 5.	64%	32%	4%	---	---
Competency 6.	70%	28%	---	2%	---

67.6% of teachers are at an always competitive level, and 28.3% are at an almost always competitive level; 4.06% are not competitive enough.

Table 8
Teamwork skills

Competencies	Always	Almost always	Sometimes	Almost never	Never
Competency 1.	70%	28%	2%	---	---
Competency 2.	64%	34%	2%	---	---
Competency 3.	56%	44%	---	---	---
Competency 4.	62%	32%	6%	---	---
Competency 5.	76%	22%	2%	---	---

65.6% of teachers are at an always competitive level, and 32% are at an almost always competitive level; 2.4% are not competitive enough.

Table 9
Negotiation and mediation skills

Competencies	Always	Almost always	Sometimes	Almost never	Never
Competency 1.	64%	34%	2%	---	---
Competency 2.	54%	42%	4%	---	---
Competency 3.	56%	34%	10%	---	---
Competency 4.	82%	16%	2%	---	---
Competency 5.	72%	24%	4%	---	---

65.6% of teachers are at an always competitive level, and 30% are at an almost always competitive level; 4.4% are not competitive enough.

Table 10
Social and institutional commitment competencies

Competencies	Always	Almost always	Sometimes	Almost never	Never
Competency 1.	82%	16%	2%	---	---
Competency 2.	64%	32%	4%	---	---
Competency 3.	80%	18%	2%	---	---
Competency 4.	92%	6%	2%	---	---
Competency 5.	86%	12%	2%	---	---
Competency 6.	90%	8%	2%	---	---
Competency 7.	92%	8%	---	---	---

83.7% of teachers are always competitive, and 14.2% are almost always competitive; 2.01% are not competitive enough.

Table 11
Initiative Competencies

Competencies	Always	Almost always	Sometimes	Almost never	Never
Competency 1.	70%	28%	---	2%	---
Competency 2.	80%	20%	---	---	---
Competency 3.	82%	14%	2%	2%	---
Competency 4.	66%	32%	2%	---	---
Competency 5.	60%	36%	4%	---	---

71.6% of teachers are at an always competitive level, and 26% are at an almost always competitive level; 2.4% are not competitive enough.

Table 12
Achievement-oriented competencies

Competencies	Always	Almost always	Sometimes	Almost never	Never
Competency 1.	76%	22%	2%	---	---
Competency 2.	68%	32%	---	---	---
Competency 3.	72%	26%	---	2%	---
Competency 4.	78%	18%	4%	---	---
Competency 5.	80%	20%	---	---	---

74% of teachers are at an always competitive level, and 24.4% are at an almost always competitive level; 1.6% are not competitive enough.

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Table 13
Competencies in the use of technologies

Competencies	Always	Almost always	Sometimes	Almost never	Never
Competency 1.	54%	38%	6%	2%	---
Competency 2.	44%	40%	12%	4%	---
Competency 3.	58%	38%	2%	2%	---

52% of teachers are at an always competitive level, and 38.66% are almost always competitive; 9.34% are not competitive enough.

Discussion and conclusions

As for the general objective, which is to estimate the levels of professional competencies developed by Colombian teachers at the basic education levels during their undergraduate training, we can say that the competencies required in the Colombian teacher profile for this level are achieved in approximately 75%, and that this level is still not sufficient to achieve the educational excellence policies for 2025, as a better educated country.

It was possible to verify that there is a good percentage in the acquisition of competencies pertinent to the Colombian teaching profile. The search strategies for tools for the leveling of teachers who lack the proper competencies is urgent and the action of immediate improvement proposals to fill these gaps. This action must be assumed for now by the educational institution where the graduate performs the practices of the teaching-learning process.

The statistical tables also show us a panorama of little sufficiency in the use of ICTs as a pedagogical tool; at this point the situation is worrying and is a priority for the current situation of education in the virtual environment. In teachers, there is a great void in the use of ICTs as a pedagogical tool, and this has limited teachers to be able to perform adequately.

From the specific objectives, we can see, at least in the sample group, how our teachers are doing with regard to the different blocks of professional competencies that we sought to identify.

When looking at the research as a whole, it is up to the institution to formulate the direction of continuing education plans, so that in the whole set of competencies there is a holistic training in the teacher who acts in the development of educational projects in the institutions where he/she provides service at the basic education level. It is the duty of the different training entities (universities and higher education centers) to work together in order to provide the elements that train teachers in the competencies relevant to their field of action.

Limitations

One of the great limitations, which was given for this specific research, is the pandemic environment that the whole humanity lives. Due to this situation and the change of paradigms in education, the teacher is forced to use the communication tools of the new technologies in a compulsory way, and with them the challenges acquire new variants.

Another limitation is the analysis of the different variants of the five alternatives by groups, both of male and female teachers as well as teachers working in different courses and subjects. A general analysis has been made without being able to discriminate these variants. This can be developed in a parallel investigation.

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The heterogeneous set of ages and years of graduation or formative periods is also a limitation for two decades ago there was no talk of competencies, and it is difficult to analyze the elements that teachers who graduated at that time possess in analogy to competencies. Similarly, not being able to apply the research with a larger sample due to the same pandemic situation and to the fact that the permissions to access state institutions is costly in procedures for access to such information and by the same policies of the municipality that does not allow this kind of inquiries and collection of information.

There are also limitations in the instruments that were elaborated for the collection of information since for each group of competencies it would require the construction of more defined and specific items on the causes and effects. Therefore, the objective was to point out the group of general competencies that the teaching profile requires in the educational environment framed in the research.

Implications and proposals for continuity

The first thing we can determine as an implication of the research is that the elements obtained are only the beginning of a diagnosis that must be completed with the help of other elements such as surveys more focused on each group of competencies that make up the teaching profile of our country from the teacher training environments in universities and curricular content as well as from the environments of application or teaching performance in the different educational institutions where teachers provide their services.

It is necessary to constantly monitor the state of the competencies of teachers since it is necessary to be pertinent in the field of their application as well as in the projection of excellence and educational quality, and this requires that there be an awareness of help and joint work between the different universities and educational institutions in a joint articulation of the search for the adequate and pertinent profile. Thus, in the coordinated work of both entities, provide a better-quality training to teachers, both at the undergraduate level as well as in continuing education.

The research is projected not only to apply it to new groups of teachers but also to seek to detail research elements and instruments that facilitate it in each of the identified blocks of competencies and to be able to indicate which are the factors that favor or not the achievement of these competencies that make up that block, the effects they cause in the action of the teacher when they are possessed, and when not to detect with greater precision the individual threats and gaps and to consolidate the strengths and opportunities for each one of them.

This analysis of diagnoses carried out, shared with different institutions for the application of the proposed instruments or other similar ones, will give a much more objective vision in the municipal field of the state of competitiveness of the teachers who work in our environment.

Research is the door to a series of processes that have to offer as a result a constant search for the educational quality so longed for the good of human resources, both at the level of those who form and those who are formed, and achieve the goals proposed for productivity and progress in the community.

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INCIDENCE OF AUGMENTED REALITY IN LEARNING ON EARLY CHILDHOOD

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Abstract. This research analyzed the association between the achievement of learning in early childhood, the level of understanding and augmented reality (AR) in an ICT-mediated environment. To meet the proposed objective, a mixed, participatory, quasi-experimental study was structured with two groups, A and B, that used AR in alternative phases of the study. This included 27 transition students from the IED Colegio Rep blica de Colombia from Bogota. For this study, a social experiment that develops the practical empirical component was carried out; in this, AR is used in didactic units, designed, developed, and evaluated in the conceptual framework of teaching for understanding, in environments that combine the physical world with the virtual world, to identify, analyze and explain the changes that occur in learning and the level of understanding of students. The results showed that the implementation of AR resources statistically affect the growth of levels of understanding for each of the dimensions considered in the conceptual framework of understanding. In the execution of the didactic units, the potential of AR to promote student understanding was evidenced, especially in the dimension of forms of communication.

Keywords: educational technology, motivation, didactic technique, educational environment, comprehension, augmented reality.

INCIDENCIA DE LA REALIDAD AUMENTADA EN EL APRENDIZAJE DE LA PRIMERA INFANCIA

Resumen. Esta investigaci n analiz la asociaci n entre el logro del aprendizaje en la primera infancia, el nivel de comprensi n y la realidad aumentada (RA) en un ambiente mediado por las TIC. Para cumplir con el objetivo propuesto, se estructur un estudio mixto de corte participativo, cuasi experimental, con dos grupos, A y B, que utilizaron RA en fases alternativas del estudio. En este, participaron 27 estudiantes de transici n de la Instituci n Educativa Distrital (IED) Colegio Rep blica de Colombia de Bogot (Colombia). Para este estudio, se llev a cabo un experimento social que desarroll el componente emp rico pr ctico, en el cual se utiliz la RA en unidades did cticas, dise adas, desarrolladas y evaluadas en el marco conceptual de la ense anza para la comprensi n en ambientes que combinan el mundo f sico con el mundo virtual, para identificar, analizar y explicar los cambios que se presentan en el aprendizaje y el nivel de comprensi n de los estudiantes. Los resultados demostraron que la implementaci n de los recursos de RA

incide estadísticamente en el crecimiento de los niveles de comprensión para cada una de las dimensiones consideradas en el marco conceptual de la comprensión. Se evidenció en la ejecución de las unidades didácticas la potencialidad de la RA para promover la comprensión de los estudiantes, especialmente en la dimensión de las formas de comunicación.

Palabras clave: tecnología educacional, motivación, técnica didáctica, ambiente educacional, comprensión, realidad aumentada.

Introduction

In recent years, Information and Communication Technologies (ICTs) have approached educational institutions with technological advances that allow experimenting with new devices, resources, and applications. These have opened a wide range of opportunities in the teaching-learning process. Within these advances, emerging technologies emerge, such as augmented reality (AR); this is the one that "allows adding an unreal object to a real context" (Cabero et al., 2018, para. 1) that can be used in educational institutions in the service of various purposes related to education, which new educational challenges can be raised.

One characteristic of augmented reality that favors its inclusion in the educational world is that it allows "complementing" the real world with a virtual object without replacing it (Vidal, Febrero López and Casal Otero, 2021). This technology helps to considerably reduce the time needed to understand complex subjects since it enables motivating and attractive learning for both students and teachers.

According to studies carried out in the educational field, AR is a tool that can be very useful at all stages, helping students to have a more experiential, real, and close learning process. Some studies already endorse this success using AR, for example, in the case of its use for learning the foreign language: English, in the primary stage, has been proven that this tool facilitates the development of classes and improves the acquisition of the contents of the students (Bezares, 2020).

In the infant stage, there are studies such as the one by López-Belmonte et al. entitled "The Effectiveness of Augmented Reality in the Early Childhood Classroom"; which presents a study conducted in an infant classroom, specifically in the 3rd year of the 2nd cycle, when the students are between 5 and 6 years old, whose results indicate that those students who had used the technological tool mentioned obtained "significantly superior" results than those who did not use it (López-Belmonte et al., 2019).

On the other hand, articles such as the one by Márquez (2018) studies the relationship between didactic games and AR and tells us how "the use of this technology improves the use of knowledge" (p. 1). Or that of Prendes (2015), who points out that "Augmented Reality is a promising technology (...), which can help improve the teaching-learning process" (p. 187).

Some of the conclusions of these studies yield information such as that AR allows these resources to be "contextualized to the needs and tastes of their users and can provide better facilities and motivation within their learning" (Bezares et al. 2020, p.88), in addition it is specified that "all students who have worked with AR have acquired more knowledge (...), and that such knowledge lasts longer in time" (Cascales, 2015, p.12). On the other hand, López et al. point out *that* "the use of AR resources improves the grade obtained, participation, autonomy, attitude, motivation, interest, attention and promotes collaborative, ubiquitous, meaningful and constructivist learning in young learners" (López et al. 2019, p.157).

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In the case of more global studies investigating how this technology has influenced education in general, the results point out that "logical changes stand out, such as greater and different access to information, together with transcendent innovations, such as the increase in informal and playful activities, insertion in iconic virtual environments, belonging to specific groups and networks of friendly interaction within new scales of values" (Fombona et al, 2017, p. 63).

In the infant stage, we find studies such as the one by L pez-Belmonte et al. entitled The Effectiveness of Augmented Reality in the Early Childhood Classroom ; which presents a study conducted in an infant classroom, specifically the 3rd year of the 2nd cycle, when the students are between 5 and 6 years old, whose results indicate that those students who had used the technological tool mentioned obtained "significantly superior" results than those who did not use it (L pez-Belmonte et al., 2019).

A thorough review of different sources (books, articles, research, theses, etc.) that deal with the study of educational technologies reveals an infinite number of innovative technological resources and the implementation of programs. The question arises when looking for research that focuses its efforts on determining the relationship between technology and learning; that is, to compare to what extent technological resources influence student learning, especially in early childhood. Among the advantages pointed out in the different review sources, "there is the increase in motivation and interest of students when using AR" (Gavilanes et al., 2018, p. 16); however, novelty is also pointed out as a disadvantage. This awakens students' motivation but decreases over time.

The technological resources most commonly used in the development of the experimental phase of the studies reviewed were mobile devices, desktop computers, HMD, and 3D glasses. Among the disadvantages of the use of educational resources with AR, problems of usability and access to technological resources, excessive reading time requirements, and slight fatigue in students are pointed out. (Gavilanes et al., 2018, p. 17).

Another of the fundamental aspects to point out in the studies reviewed is the need for methodologies to integrate AR in educational processes, so that the incorporation of AR does not become a technological problem but rather an educational and pedagogical contribution. Among the lines to be developed are analyzing the potential of AR for students with special needs and early childhood; determining the new roles of teachers and students; and establishing elements for the design and implementation of AR applications by identifying technological and pedagogical resources in the classroom.

Digital resources are additional instruments present in the context of current childhood development; it is not the same to interact with a tool that arrives when one is already in the world as it is to be born into it when such a tool already exists (Ferreiro, 2011). This leads to questioning the pedagogical potential of ICTs in education and how they impact student learning and improve the quality of teaching. It is important to determine whether augmented and enriched technological environments offer new possibilities for learning, and to what extent AR is a promising technology in education to become a motivational system capable of maximizing student understanding and learning.

This doctoral thesis is situated in this context, focusing on the analysis of the impact of AR on early childhood students' learning, thus yielding results on the extent to which such technology improves the quality of learning.

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Method

This mixed, participatory, and quasi-experimental study seeks to establish changes in students' learning and level of understanding by analyzing particular variables. Accordingly, the dependent variable is learning; and the didactic units with and without AR activities are the independent variable.

The design of the study is quasi-experimental since the intervention takes place in a natural situation, without random assignment of the groups. Specifically, there are two experimental groups, A and B, and the didactic units are applied to both, so that they benefit from the methodological resource. They should use AR in alternative phases of the study.

The adapted design scheme (Table 1) shows the five didactic units that were applied in three quarters. In the first quarter, groups A and B worked with AR; in the second quarter, group A worked with AR and group B without AR, teaching units 2 and 4, respectively; and finally, in the third quarter, group A worked without AR and group B with AR, teaching units 3 and 5, respectively. Finally, comparisons were established for both groups with the measurements obtained from the rubric of each of the didactic units.

Table 1
Study design scheme

2019 quarter	Transition group 3	Didactic unit	AR	Heading
1	A AND B	UD1	YES	RUD1
2	A	UD2	YES	RUD2
	B	UD4	NO	RUD4
3	A	UD3	NO	RUD3
	B	UD5	YES	RUD5

Note: own elaboration

For each didactic unit worked with and without the AR resource, the students' level of comprehension is evaluated; four levels are differentiated: na ve, beginner, learner, and mastery. This evaluation is carried out five times by the teacher, which makes it coincide with the development of each of the didactic units.

The question is to know and explain the changes in learning in the transition students of Colegio Rep blica de Colombia. For this purpose, an evaluation rubric is used for each of the five didactic units implemented in the students' learning environment in which the use of AR resources is considered. Each evaluation rubric, designed within the framework of teaching for understanding (TEQ), considers 16 qualitative quadrants, product of the crossing of the "four dimensions of understanding: content, purpose, method, and forms of expression; with four levels of understanding: na ve, beginner, learner, mastery " (Wiske, 1999, p. 230). These make it possible to determine and locate the student's level of comprehension according to each dimension, to perform a comparative analysis of the results, and to determine changes in learning based on the continuous diagnostic assessment of the student's performance.

The categories established for the organization and analysis of the data are based on the dimensions and levels of comprehension that were defined based on the conceptual model of comprehension, according to which the qualities of comprehension can be known from the assessment of the students' performance (Wiske, 1999, p. 227). The categories defined to evaluate and know the changes in learning and comprehension are:

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"content, method, purpose, and forms of communication, in their levels of na ve, beginner, learner, and mastery " (Rivera, 2014, p. 80).

The conceptual framework of the CPE is summarized below (Table 2). The four dimensions and the four levels of comprehension for the elaboration of the evaluation rubrics and instruments used to assess the level of comprehension achieved for the performances defined in the planning of each of the didactic units with and without AR designed and applied in the study are shown.

Table 2
Outline of the conceptual framework for understanding

DIMENSIONS	Content	Methods	Purposes	Form of communication
	A. Transformed intuitive beliefs B. Conceptual, coherent, and rich networks	A. Healthy skepticism B. Building domain knowledge C. Validate domain knowledge	A. Awareness of the purposes of knowledge B. Uses of knowledge C. Autonomy management	A. Good management of performance genres B. Effective use of symbol systems C. Consideration of audience and context
LEVELS	Mastery	Learner	Beginner	Na ve
	Integrative, creative, and critical. They use knowledge to interpret the world.	Flexible use of concepts. With support, they detect the relationship in everyday situations.	Mechanical procedures. The validation of the work depends on external authority.	Intuitive and not very reflective knowledge. Unstructured knowledge.

Note: own elaboration

The changes in learning and understanding on the part of the students are recorded with the information obtained from the application of the evaluation rubric of the didactic units managed. Thus, results and conclusions are generated. The creation of the resources for this research, the AR applications, and the didactic units has been a multidisciplinary process in which professionals with different profiles, experiences and points of view on how didactic materials should be and should be created have participated. These have been teachers, experts in early childhood education, graphic designers, engineers, and pedagogues.

For the research, three AR applications are designed, whose topics are recycling, healthy eating, and school garden. As for the didactic units, two models of guides are designed for students who work with AR and for those who work without AR. Each is based on the pedagogical model of teaching for understanding. In conclusion, the design of the present study is framed in the mixed approach; it is a participatory research with a practical and quasi-experimental approach. Figure 1 describes the information process in the study.

Figure 1. Diagram of the information process in the study.

Population and sample

The target population of the proposed research corresponds to 125 students from five transition grades of the Colegio Rep blica de Colombia, whose ages range between 5 and 6 years old. The distribution of the participating students by gender and by group is shown in Tables 3 and 4, respectively.

Table 3
Distribution of participating students according to gender

Genre	Number of students	Percentage
Boys	13	48,14 %
Girls	14	51,85 %

Note: own elaboration

Table 4
Distribution of participating students by group and gender

Group	Boys	Girls	Total
A	7	7	14
B	6	7	13

Note: own elaboration

The sample is made up of 27 transition 3 students corresponding to 20.8% of the population. These children are part of the same study group that, from the concept of sample composition, is statistically representative to observe, analyze, and validate the information obtained and to issue with a good level of reliability the judgments in relation to the verification of the formulated hypotheses.

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Results

The dimensions and levels of comprehension obtained in each of the didactic units with and without AR allow for a comparative analysis of the results in the levels of comprehension for each of the dimensions. In didactic unit 1 with AR, groups A and B participated; in didactic unit 2 with AR, group A participated and, simultaneously, group B worked on didactic unit 4 without AR; finally, in unit 3 with AR, group B participated and, simultaneously, group A worked on didactic unit 5 without AR. Based on this information, the radiography of the comprehension of the transition course 3 in the five didactic units implemented and the results in each of the dimensions of comprehension were consolidated, which is presented in Table 5.

Table 5
Consolidated outline of course comprehension transition 3

Dimensions	Unit didactics 1 with AR groups a and b	Unit didactic 2 with AR group a	Unit didactic 3 with AR group b	Unit didactic 4 without AR group b	Unit didactic 5 without AR group a
Contents	**Level of understanding** mastery 44 % learner 41 % beginner 0 % na ve 0 %	**Level of understanding** mastery 50 % learner 29 % beginner 7 % na ve 14 %	**Level of understanding** mastery 69 % learner 31 % beginner 0 % na ve 0 %	**Level of understanding** mastery 38 % learner 62 % beginner 0 % na ve 0 %	**Level of understanding** mastery 7 % learner 64 % beginner 22 % na ve 7 %
Methods	**Level of understanding** mastery 41 % learner 26 % beginner 19 % na ve 15 %	**Level of understanding** mastery 43 % learner 29 % beginner 14 % na ve 14 %	**Level of understanding** mastery 61 % learner 31 % beginner 8 % na ve 0 %	**Level of understanding** mastery 38 % learner 54 % beginner 8 % na ve 0 %	**Level of understanding** mastery 7 % learner 57 % beginner 36 % na ve 0 %
Purpose	**Level of understanding** mastery 48 % learner 19 % beginner 18 % na ve 15 %	**Level of understanding** mastery 36 % learner 36 % beginner 14 % na ve 14 %	**Level of understanding** mastery 69 % learner 23 % beginner 8 % na ve 0 %	**Level of understanding** mastery 38 % learner 46 % beginner 8 % na ve 8 %	**Level of understanding** mastery 7 % learner 64 % beginner 22 % na ve 7 %
Communication	**Level of understanding** mastery 37 % learner 33 % beginner 30 % na ve 0 %	**Level of understanding** mastery 36 % learner 21 % beginner 29 % na ve 14 %	**Level of understanding** mastery 46 % learner 46 % beginner 8 % na ve 0 %	**Level of understanding** mastery 15 % learner 62 % beginner 23 % na ve 0 %	**Level of understanding** mastery 14 % learner 43 % beginner 29 % na ve 14 %

Note: own elaboration

Analysis of results by dimension

Content dimension**:** Figure 2 shows the levels obtained by the students in this dimension.
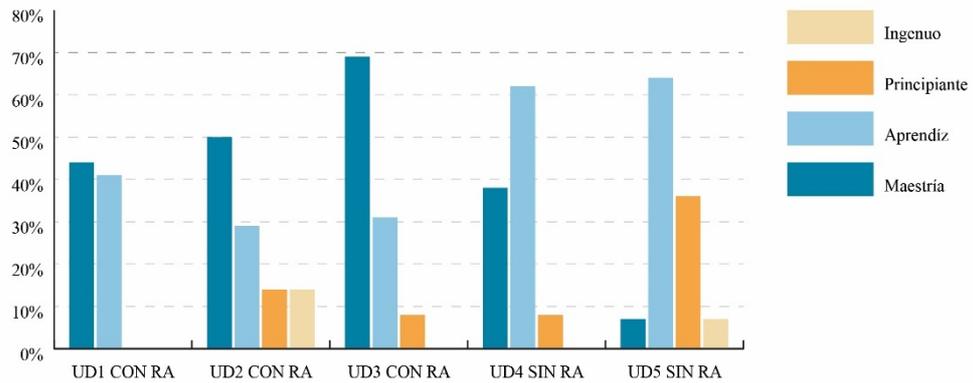
Figure 2. Percentage of levels obtained in the content dimension.

Analysis of the content dimension

The content dimension of comprehension focuses on students' conceptual knowledge. The mastery level is the one that concentrates in each of the didactic units with AR the highest number of performances in this dimension, with percentages of 44%, 50%, and 69%, respectively. This ratifies that students, in the didactic units worked with AR, evidenced knowledge of the subject treated, responded to the forms of intervention and understood what it is done for. Students were critical, creative, and used the knowledge acquired to solve situations and reinterpret their environment.

Method dimension: Figure 3 shows the levels obtained by the students in this dimension.
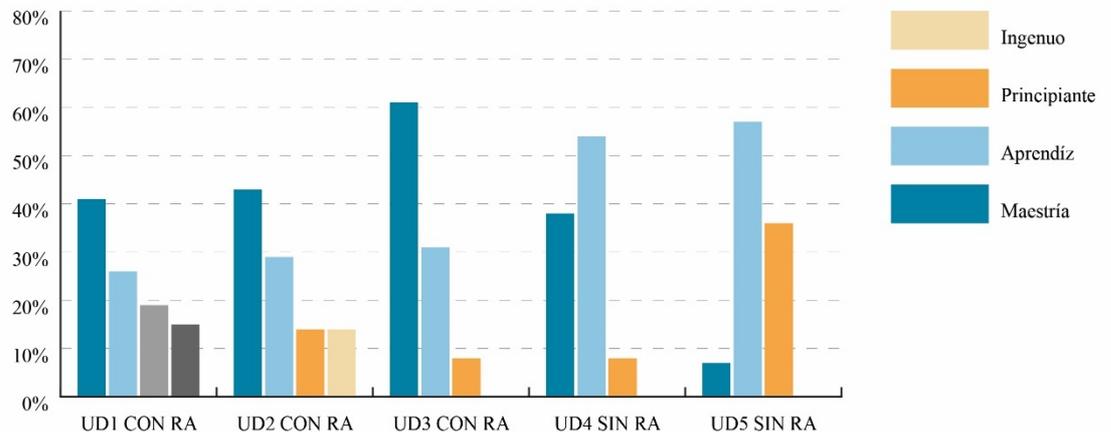
Figure 3. Percentage of levels obtained in the method dimension.

Analysis of the method dimension

The method dimension of understanding focuses on finding how to generate and construct knowledge by using and validating formal sources and questioning one's own with a healthy skepticism. This is complex for anyone, even generating knowledge methodically from instructions and with available resources has a degree of difficulty.

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The mastery level is the one that concentrates in each of the didactic units with AR the highest number of performances in this dimension, with percentages of 41%, 43%, and 61%, respectively. This confirms that students, in the didactic units that worked with AR, maintained a healthy skepticism about what they know and what they were told, and used reliable methods to construct and validate statements and works.

Purpose dimension: Figure 4 shows the levels obtained by students in this dimension.
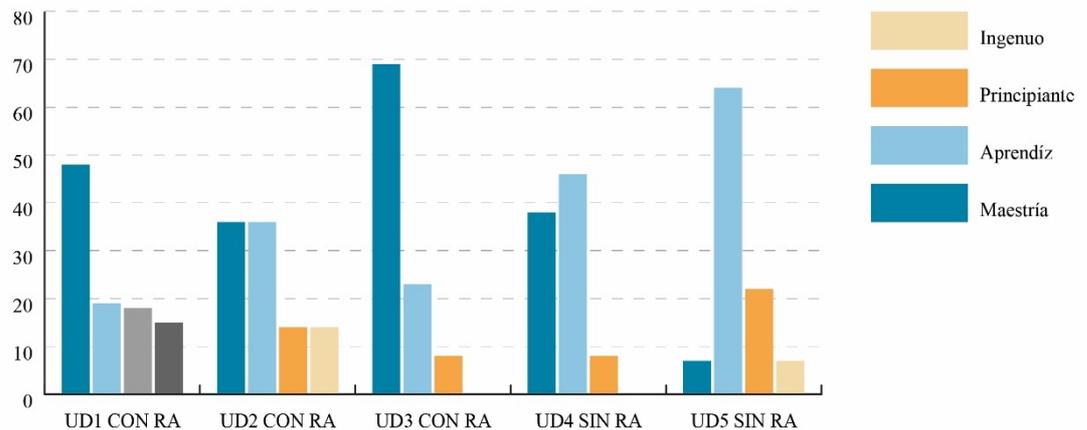
Figure 4. Percentage of levels obtained in the purpose dimension.

Analysis of the purpose dimension

The purpose dimension of understanding focuses on students demonstrating that they know and use knowledge of principles and values; that they identify the use and application of knowledge in the context; that they make use of good management and conceptual and behavioral autonomy in the development of the activity; and that they are consistent with what they are working on, as they prove it in their activities and attitude.

The mastery level is the one that concentrates in each of the didactic units with AR the highest number of performances in this dimension, with percentages of 48%, 36%, and 69%, respectively. This ratifies that students, in the didactic units worked with AR, had clear purposes and interests that guided the construction of knowledge, used it in different situations and knew the consequences of doing so.

Communication forms dimension: Figure 5 shows the levels obtained by the students in this dimension.
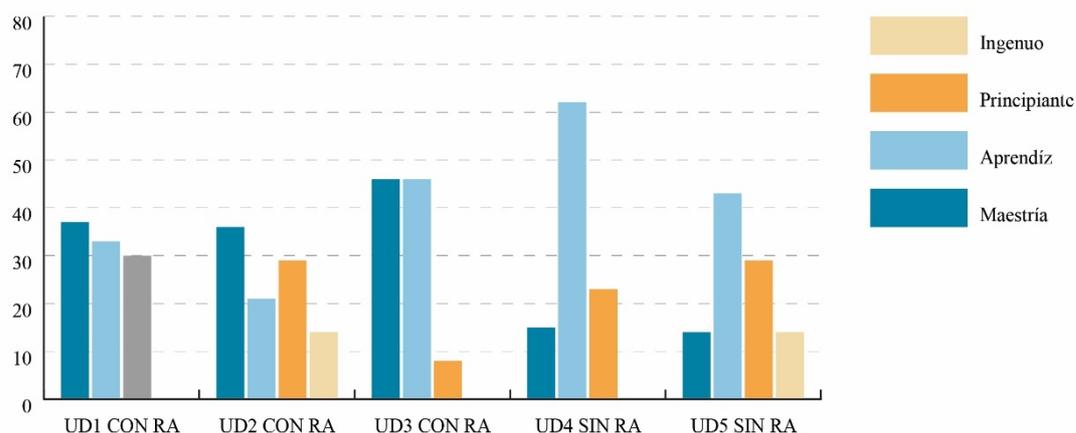
Figure 5. Percentage of levels obtained in the dimension of forms of communication.

Analysis of the dimension of forms of communication

The mastery level is the one that concentrates in each of the didactic units with AR the highest number of performances in this dimension, with percentages of 33%, 36%, and 46%, respectively. This ratifies that the students, in the didactic units worked with AR, managed to master the types of communication and were facilitated to express what they knew in different contexts and in different ways. The dimension of forms of communication deals with the understanding in which ICTs naturally find their development environment. Here, technological resources offer the best and greatest support in the generation of understanding, where students develop in a comfortable way.

In the didactic units with AR, the number of students at the mastery level prevails in the four dimensions of comprehension; and in the didactic units without AR, the learner level prevails over the mastery level. This allows us to affirm that, in the didactic units with AR, the transition students achieved a higher level of comprehension. For Ausubel (1963), learning is synonymous with understanding, which implies meaningful learning; this is not only the process of relating knowledge but of actively and personally controlling it, so that new knowledge is related to existing knowledge in order to give it functionality.

Content dimension analysis with AR and without AR

The comparative analysis of each of the dimensions of comprehension is carried out by giving a numerical value to each of the levels, as shown in Table 6 below.

Table 6
Numerical value of comprehension levels

Level of understanding	Numerical value
Na ve	1
Beginner	2
Learner	3
Mastery	4

Note: own elaboration

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Unit 2 with AR and unit 5 without AR

Table 7

Comparative analysis of content dimension UD2 with AR and UD5 without AR

		U2 with AR content	U5 without AR content
N	Valid	14	14
Mean		3,14	2,71
Median		3,50	3,00
Standard deviation		1,099	,726
Minimum		1	1
Maximum		4	4

Note: own elaboration

When analyzing the data obtained in didactic unit 2 with AR in Table 7, it is observed that the average is 3.14, and that, in didactic unit 5 without AR, it is 2.71. This means that by using AR the average number of students shifts towards the maximum value, which implies a higher number of students between the mastery and apprentice levels in the dimension of content comprehension. On the other hand, the increase in the standard deviation reflects that there is a percentage of students in group A, who are at the na ve level; therefore, there are still difficulties in their comprehension. This is positive insofar as it allows us to identify more easily the cases in which students present comprehension deficiencies; thus, these cases can be attended to in a particular way. Regarding Figures 6 and 7, it can be observed that the number of students at the mastery level increases significantly when AR is used in the implementation of the didactic unit.

Figure 6. UD5 content dimension without AR
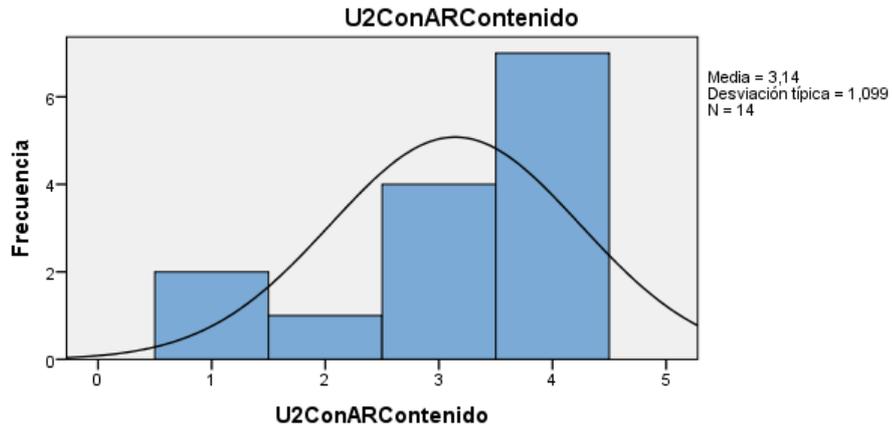
Figure 7. UD2 content dimension with RA

Unit 3 with AR and unit 4 without AR

Table 8
Content dimension analysis UD3 with AR and UD4 without AR

		U3 with AR content	U4 without AR content
N	Valid	13	13
Mean		3,69	3,38
Median		4,00	3,00
Standard deviation		,480	,506
Minimum		3	3
Maximum		4	4

Note: own elaboration

When analyzing the data obtained in didactic unit 3 with AR in Table 8, it is observed that the mean is 3.69, and that in didactic unit 4 without AR it is 3.38. This points out that when using AR, the average number of students shifts towards the maximum value, which implies a higher number of students between the mastery and learner levels in the dimension of content comprehension. On the other hand, the decrease in the standard deviation reflects that there are no students from group A in the lower levels; therefore, there are no comprehension difficulties. Regarding Figures 8 and 9, it is observed that the number of students in mastery level grows significantly when AR is used in the implementation of the didactic unit.

Figure 8. UD3 content dimension with R
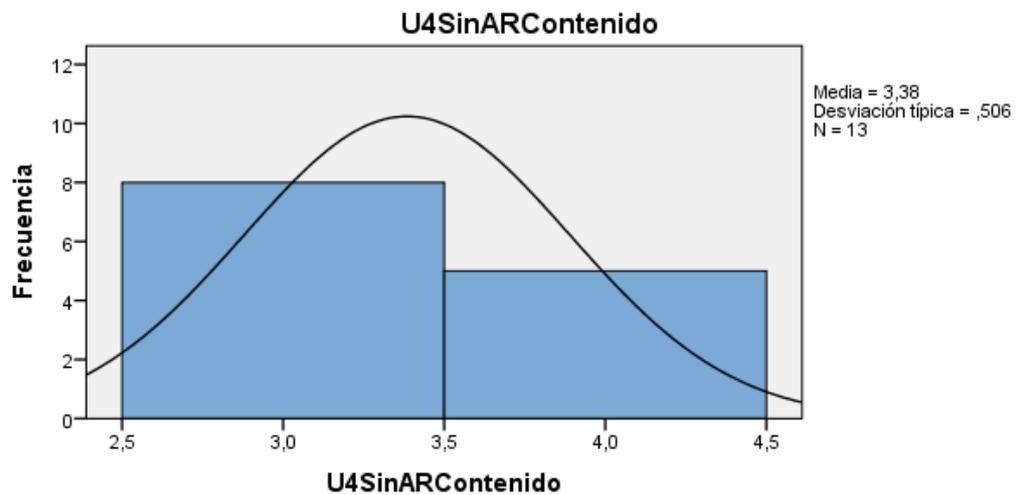
Figure 9. UD4 content dimension without RA

Dimensional analysis of AR and non-AR methods

Unit 2 with AR and unit 5 without AR

Table 9
Analysis dimension of UD2 with AR and UD5 without AR methods

		U2 with AR methods	U5 without AR methods
N	Valid	14	14
Mean		3,00	2,71
Median		3,00	3,00
Standard deviation		1,109	,611
Minimum		1	2
Maximum		4	4

Note: own elaboration

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When analyzing the data obtained in didactic unit 2 with AR in Table 9, it is observed that the mean is 3.00, and that in didactic unit 5 without AR it is 2.71. This shows that when using AR, the average number of students shifts towards the maximum value, which implies a higher number of students between the mastery and learner levels in the dimension of understanding methods. On the other hand, the increase in the standard deviation reflects that there is a percentage of the student group that is in the lower levels; therefore, difficulties are present. This is positive insofar as it allows us to identify more easily the cases in which students show shortcomings in comprehension, and these can be addressed in a particular way.
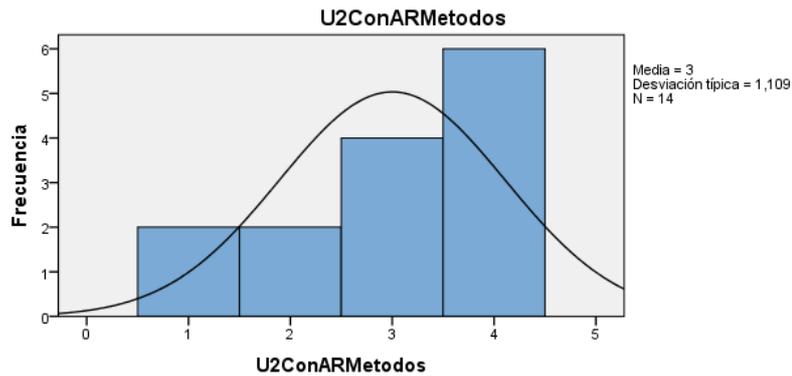
Figure 10. UD2 method dimension with RA
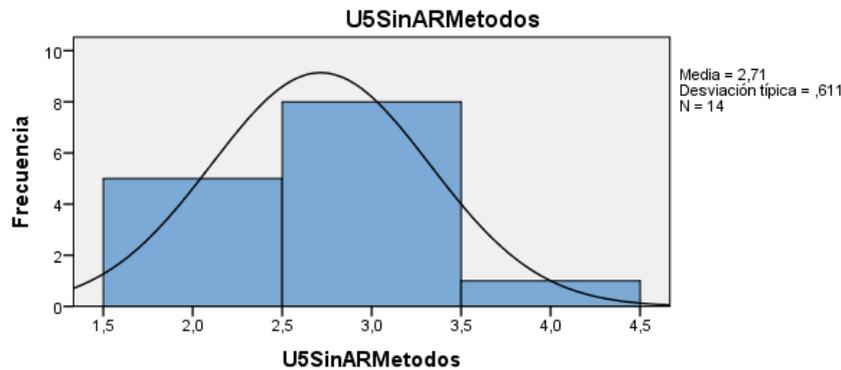
Figure 11. UD5 method dimension without AR

As for figures 10 and 11, it is observed that the number of students at the mastery level grows significantly when AR is used in the implementation of the didactic unit.

Unit 3 with AR and unit 4 without AR

Table 10
Method dimension analysis UD3 with RA and UD4 without RA

		U3 with AR methods	U4 without AR methods
N	Valid	13	13
Mean		3,54	3,31
Median		4,00	3,00
Standard deviation		,660	,630
Minimum		2	2
Maximum		4	4

Note: own elaboration

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When analyzing the data obtained in UD3 with AR in Table 10, it is observed that the mean is 3.54, and that in UD4 without AR it is 3.31. This points to the fact that by using AR the average number of students shifts towards the maximum value, which implies a higher number of students between the mastery and learner levels in the dimension of understanding methods. On the other hand, the increase in the standard deviation shows a group of students in the lower levels; these still present difficulties. This is positive, as it allows us to identify more easily the cases in which students show deficiencies in comprehension; thus, they can be attended to in a particular way.
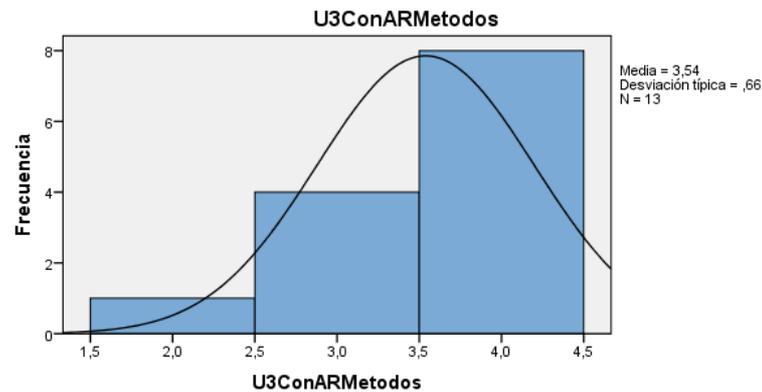
Figure 12. UD3 method dimension with AR

Figure 13. UD4 method dimension without RA

As for figures 12 and 13, it is observed that the number of students at the mastery level grows significantly when AR is used in the implementation of the didactic unit.

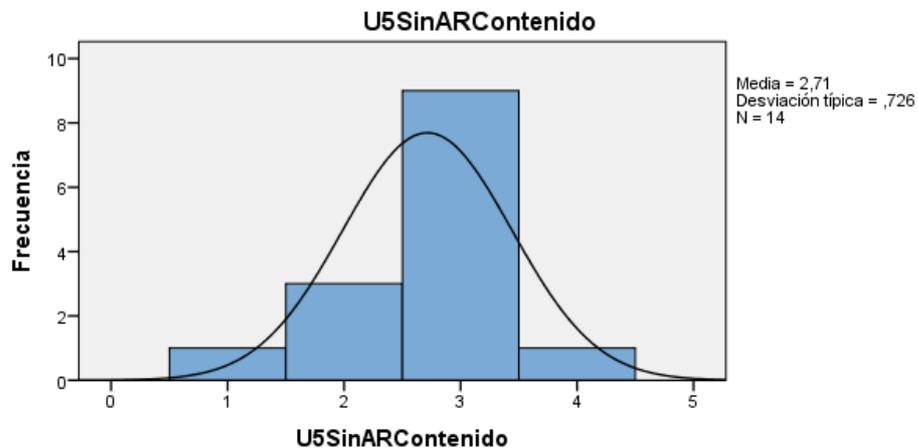***Purpose dimension analysis with AR and without AR***

Unit 2 with AR and unit 5 without AR

Table 11
Purpose dimension analysis UD2 with AR and UD5 without AR

		U2 with AR purposes	U5 without AR purposes
N	Valid	14	14
Mean		2,93	2,71
Median		3,00	3,00
Standard deviation		1,072	,726
Minimum		1	1
Maximum		4	4

Note: own elaboration

When analyzing the data obtained in didactic unit 2 with AR in Table 11, it is observed that the mean is 2.93, and that in didactic unit 5 without AR it is 2.71. This indicates that by using AR the average number of students shifts towards the maximum value, which implies a higher number of students between the mastery and learner levels in the dimension of purpose understanding. On the other hand, the increase in the standard deviation shows a group of students in the lower levels; therefore, they still present difficulties. This is positive insofar as it allows us to identify more easily the cases in which students show deficiencies in comprehension; thus, they can be attended to in a particular way.

Figure 14. UD2 purpose dimension with RA
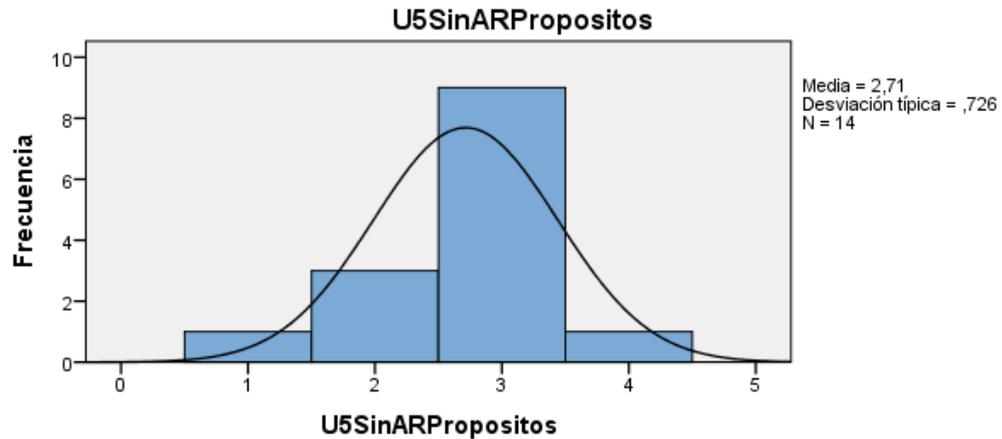
Figure 15. UD5 purpose dimension without RA

As for figures 14 and 15, it is observed that the number of students at the mastery level grows significantly when AR is used in the implementation of the didactic unit.
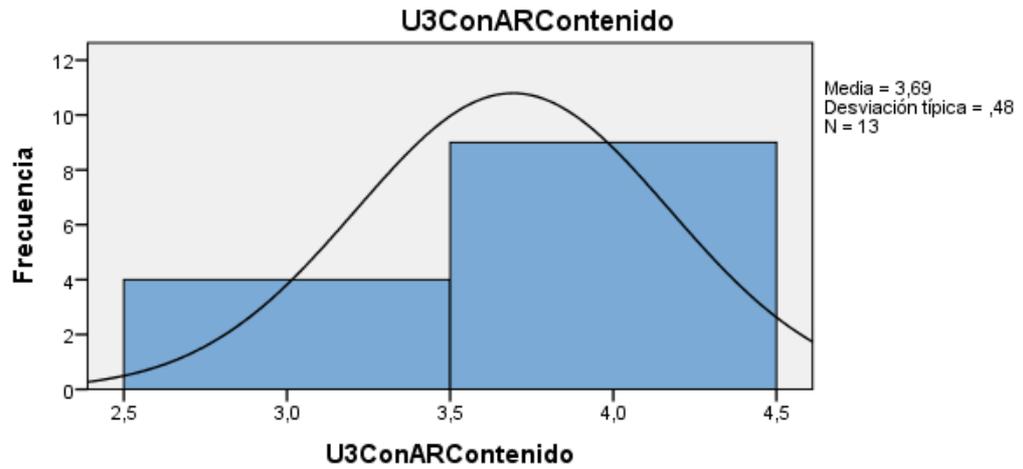
Unit 3 with AR and unit 4 without AR

Table 12
Purpose dimension analysis U32 with AR and UD4 without AR

	U3 with AR purposes	U4 without AR purposes
N Valid	13	13
Mean	3,62	3,15
Median	4,00	3,00
Standard deviation	,650	,899
Minimum	2	1
Maximum	4	4

Note: own elaboration

When analyzing the data in didactic unit 3 with AR in Table 12, it is observed that the mean is 3.62, and that in didactic unit 4 without AR it is 3.15. This indicates that by using AR the average number of students shifts towards the maximum value, which implies a higher number of students between the mastery and learner levels in the dimension of purpose comprehension. On the other hand, the decrease in the standard deviation shows a more homogeneous group of students approaching the higher levels. With respect to Figures 16 and 17, it is observed that the number of students at the mastery level grows significantly when AR is used in the implementation of the didactic unit.

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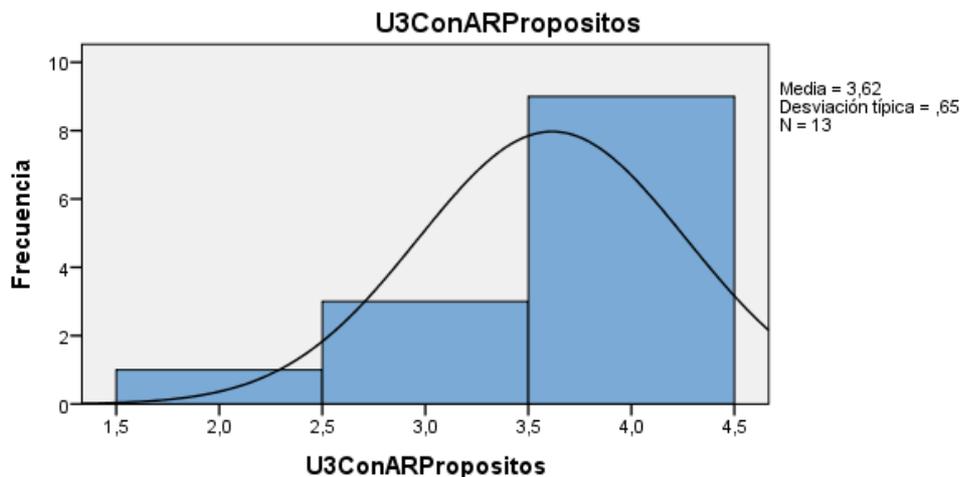
Figure 16. UD3 purpose dimension with RA
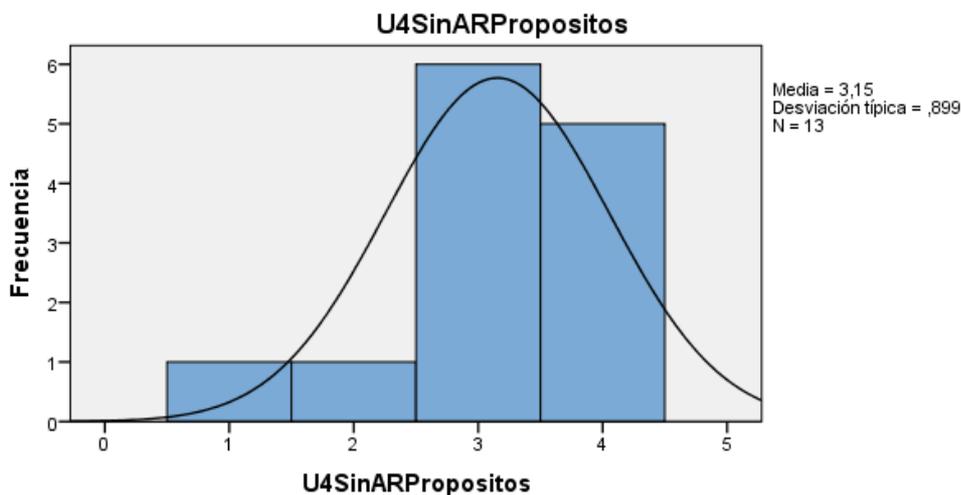
Figure 17. UD4 purpose dimension without AR

Dimensional analysis of AR and non-AR forms of communication

Unit 2 with AR and unit 5 without AR

Table 13
Communication dimension analysis UD2 with AR and UD5 without AR

		U2 with AR communication	U5 without AR communication
N	Valid	14	14
Mean		2,79	2,57
Median		3,00	3,00
Standard deviation		1,122	,938
Minimum		1	1
Maximum		4	4

Note: own elaboration

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When analyzing the data in didactic unit 2 with AR in Table 13, it is observed that the average is 2.79, and that in didactic unit 5 without AR it is 2.57. This means that when using AR, the average number of students shifts towards the maximum value, which implies a higher number of students between the mastery and learner levels in the dimension of communication comprehension. On the other hand, the increase in the standard deviation shows a group of students in the lower levels; therefore, they still present difficulties. This is positive insofar as it makes it easier to identify the cases in which students show comprehension deficiencies, and these can be addressed in a particular way.
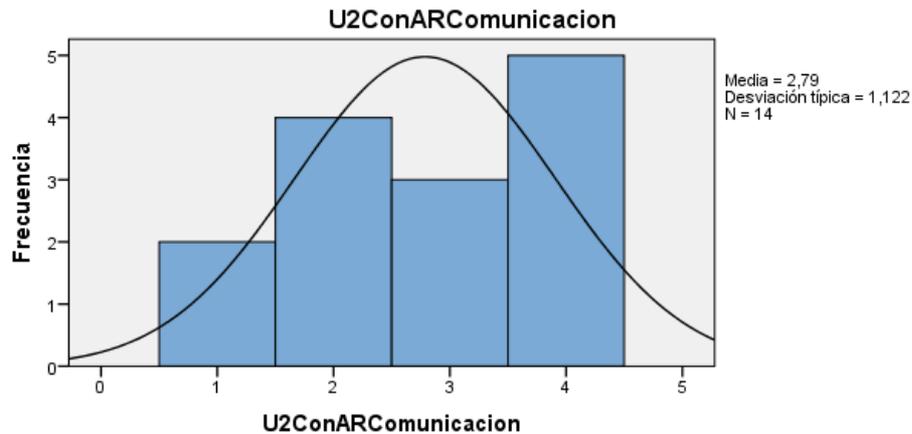
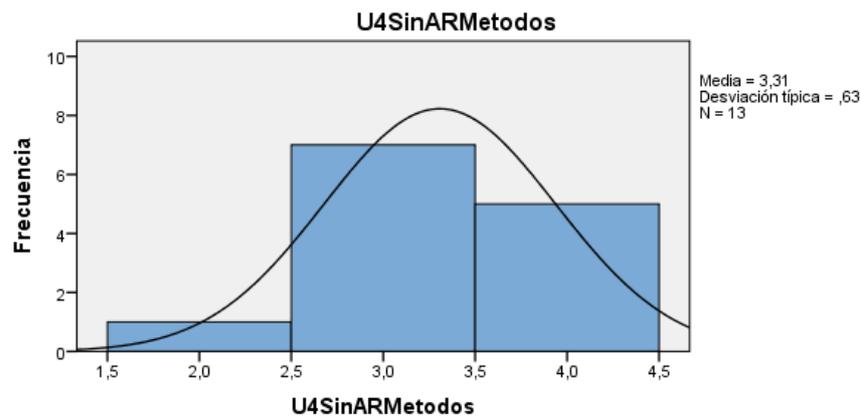*Figure 18.* UD2 communication dimension with RA
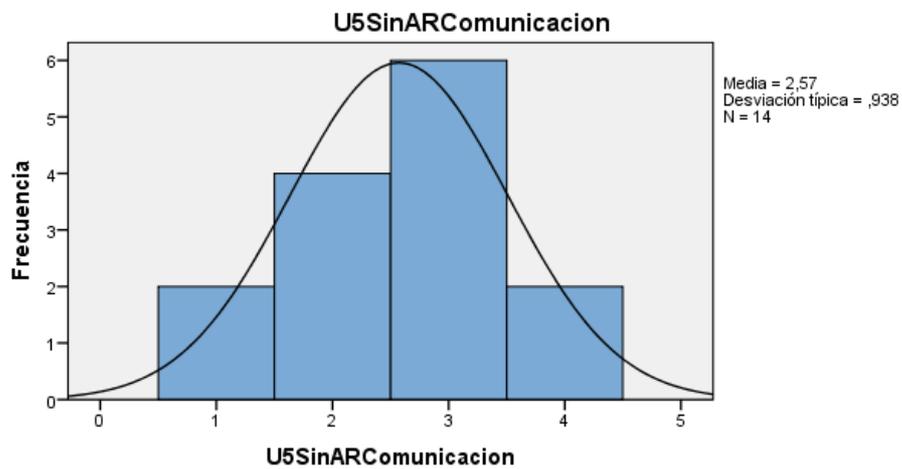
Figure 19. UD5 communication dimension without RA

As for figures 18 and 19, it is observed that the number of students at the mastery level grows significantly when AR is used in the implementation of the didactic unit.

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Unit 3 with AR and unit 4 without AR

Table 14

Communication dimension analysis UD3 with AR and UD4 without AR

	U3 with AR communication	U4 without AR communication
N Valid	13	13
Mean	3,38	2,92
Median	3,00	3,00
Standard deviation	,650	,641
Minimum	2	2
Maximum	4	4

Note: own elaboration

When analyzing the data in didactic unit 3 with AR in Table 14, it is observed that the mean is 3.38, and that in didactic unit 4 without AR it is 2.92. This indicates that when using AR, the average number of students shifts towards the maximum value, which implies a higher number of students between the mastery and learner levels in the dimension of communication comprehension. On the other hand, the increase in the standard deviation shows a group of students in the lower levels; therefore, they still present difficulties. This is positive insofar as it allows us to identify more easily the cases in which students show comprehension deficiencies; thus, they can be addressed in a particular way.
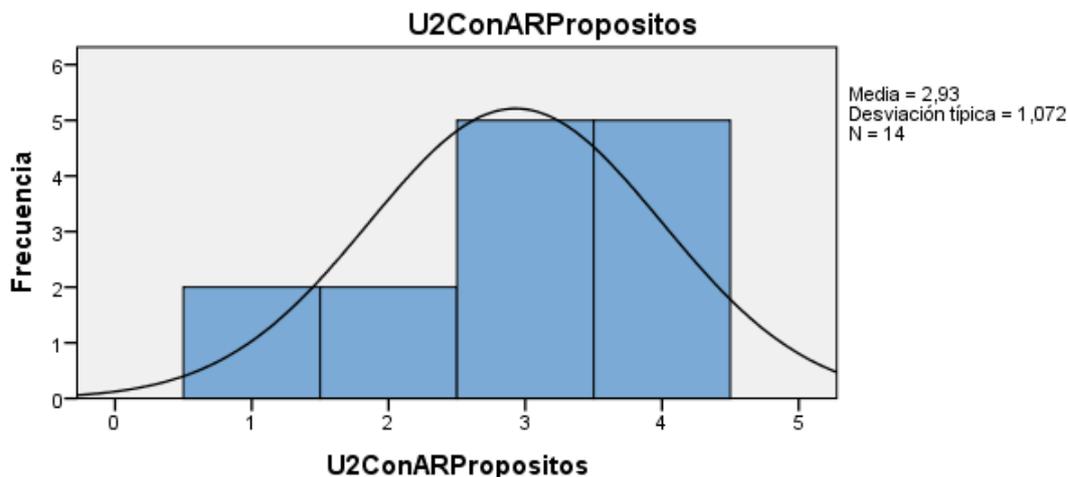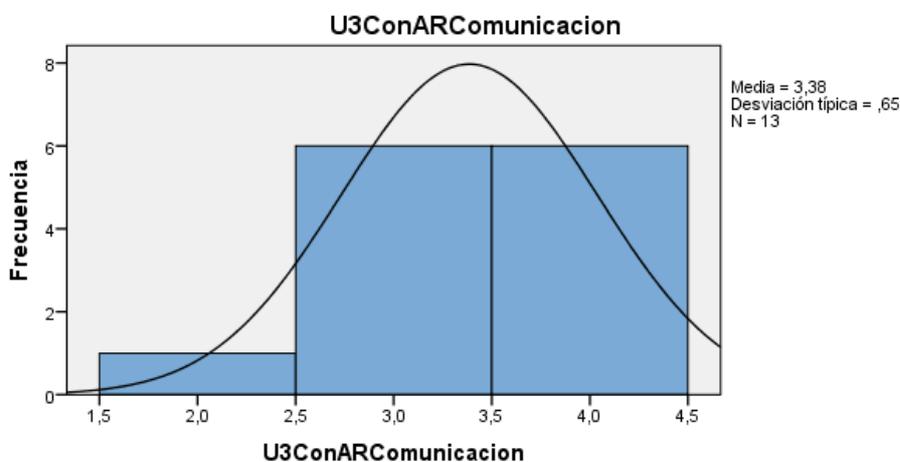

*Figure 20.* UD3 communication dimension with RA
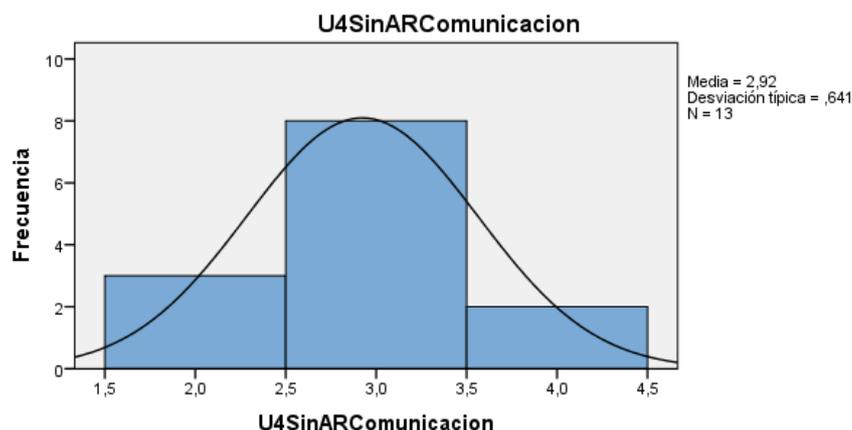
Figure 21. UD4 communication dimension without AR

As for Figures 20 and 21, it is observed that the number of students at the mastery level grows significantly when AR is used in the implementation of the didactic unit.

Discussion and conclusions

The following conclusions are established in relation to the objectives of this research and the results obtained. Taking into account the population under study, where the didactic units were implemented to determine whether AR mediation generated a differentiated effect in terms of learning and comprehension level in early childhood, it is concluded that the use of AR allowed obtaining "better results in an effective and significant way" (Buitrago-Pulido, 2015, p. 27), regarding comprehension in students who took the didactic unit with AR. The above was verified in the analysis of the differences in means between groups A and B, which a significant difference was observed; this implies that the group had a higher level of comprehension when working with AR.

Changes in the learning of preschool students at Colegio Rep blica de Colombia were identified according to what understanding means for the present study. In the words of Perkins (1999), as cited in Wiske (1999) "understanding is the ability to think and act flexibly, building on what one knows"; to put it another way, "understanding of a topic is the ability to perform flexibly with an emphasis on flexibility" (p. 11).

The results of the research are based on the theory of the conceptual framework of CPE and, specifically, on the conceptual model of understanding; this made it possible to discern, according to the students' performance, the changes in their understanding of the proposed work topics.

Specifically, the methods dimension assessed students' ability to maintain a healthy skepticism about what they know or what they are told, as well as their use of reliable methods to construct knowledge and validate information. (Wiske, 1999, p. 232).

In the didactic units with AR, it was evident that students used different methods to validate and construct their knowledge. In the "purposes" dimension, it was evaluated, among other things, "the students' ability to use knowledge in multiple situations and the consequences of doing so" (Wiske, 1999, p. 235). In the didactic units with AR, a greater

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interest and the ability to use knowledge in the development of the activities proposed was verified.

"The dimension of forms of communication evaluated the students' use of symbol systems (visual, verbal, mathematical, and bodily kinesthetic, for example) to express what they know" (Wiske, 1999). Likewise, in the didactic units with AR, different ways of communicating constructed knowledge were found.

If it is considered that, prior to the execution of the didactic units, none of the students had undergone a teaching-learning process with AR, the levels achieved in the dimensions of comprehension support changes in learning, which were sought with the present research:

The results show a determinant role of ICTs and, specifically, AR, in order to increase students' comprehension levels. It is also shown how the use of AR resources has a positive impact on the growth of comprehension levels for each of the dimensions considered in the conceptual framework of comprehension, especially in the dimension of forms of communication.

This situation is explained by considering the number of possibilities that ICTs offer to develop the criteria of this dimension and the ease of use of these by students thanks to their native digital competencies and the level of motivation they awaken in them. Therefore, when referring to educational practices, UNESCO supports the development of initiatives "aligned with the interests and characteristics of each student and the demands of the knowledge society" (UNESCO, Regional Bureau for Education in Latin America and the Caribbean, Orealc, 2013). The existence of invaluable and numerous resources offered by ICTs to support the educational processes is known, but these require the evaluation of the experts participating in the research, together with the support of the teacher-researcher. The latter knows the work methodologies at the preschool level to adapt the self-created applications to the contents, the characteristics of the students, and the context.

Cabero (2009) understood ICTs as tools to be developed in educational environments, where students construct their own knowledge through interaction with its elements. In this sense, the results of the present research show that AR, although an emerging technology, is suitable for use in educational environments; specifically, in early childhood education.

The results of the research show the positive impact that AR has on the learning of preschool students in the transition grade. However, what is most remarkable in this process is related to the way in which the different AR resources supported the comprehension processes and their determining and increasing role in this; especially, regarding the development of the dimension of the forms of communication.

The didactic units also worked without AR without minimizing the role played, considering the consistency of the pedagogical approach, the didactic strategies proposed, and the contents managed through the units. However, the same results were not achieved with and without AR, especially in the dimension of forms of communication, where AR allowed students to express their performances with resources that aroused greater interest and motivation. "ICTs offer a potential not only motivator but also structurer in student learning" (Perochena, 2009). On the other hand, through the performance in the didactic units with AR, students were given the opportunity to explore their abilities, live their passion, and visualize their potential.

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The research shows the positive impact that AR has on the learning of transition students. In this sense, and referring to the conclusions provided in this study, it was considered interesting to propose criteria and guidelines to keep in mind when undertaking similar AR experiences. As a basis for this study, several lines of research can be considered for the future.

Starting with the theoretical framework and regarding the technological development of AR, in this research we worked on AR applications with markers. This could be a line of research in a study on AR applications that work without markers, through technologies such as ARKit and ARCore, where the space is recognized to make the superimposition of virtual elements in real space. This, in order to achieve a better integration of the elements, is what enhances interaction. The study of other types of commercial applications could also be deepened, in order to broaden the field of technical-pedagogical analysis of the applications; for this purpose, it is essential to evaluate the applications and their possible use in preschool.

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ICT TO STRENGTHEN MULTIPLE INTELLIGENCES

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Abstract. The article is based on a study conducted at the Florida Adventist Institute, a private denominational educational center with 340 enrolled in secondary education. It has three educational levels, it is in Vicente L pez, province of Buenos Aires, Argentine Republic. The purpose was to analyze the use of Information and Communication Technologies, and how they favor Multiple Intelligences when studying History, a high school case. The mixed design research was carried out with a study variable and an analysis category in the context that includes 74 students of the Social Sciences modality, of Upper Secondary Education who used technological resources during the school year. Data collection was carried out on 22 educators, 14 teachers and 8 managers, through a survey and an interview, these were computerized in Excel and CmapTools software. Considering that ICTs are a set of powerful and innovative tools, their technological use is established to determine the development of intelligence, and at the same time identify how students' appropriate knowledge. Technologies accompany the teaching and learning process, they are also useful for those who learn in a traditional way, because they allow breaking structures and expanding study strategies. After the analysis of the results, the importance of implementing the WebQuest integrated to Project-Based Learning is manifested, to improve learning in History with the use of Information and Communication Technologies and favoring Multiple Intelligences.

Keywords: Technology of the information and communication; Multiple intelligences; Project Based Learning; WebQuest; educational innovation.

LAS TIC PARA FORTALECER LAS INTELIGENCIAS MÚLTIPLES Y APRENDER HISTORIA EN SECUNDARIA

Resumen. El art culo se basa en un estudio realizado en el Instituto Adventista Florida, un centro educativo privado confesional con 340 matriculados en educaci n media. Cuenta con tres niveles educativos, est ubicado en Vicente L pez, provincia de Buenos Aires, Rep blica Argentina. La finalidad fue hacer un an lisis del uso de las Tecnolog as de la Informaci n y la Comunicaci n, y c mo favorecen a las Inteligencias M ltiples al estudiar Historia, un caso de secundaria. La investigaci n de dise o mixto, se llevo a cabo con una variable de estudio y una categor a de an lisis en el contexto que incluye 74 estudiantes de la modalidad en Ciencias Sociales, de Educaci n Secundaria Superior quienes utilizaron recursos tecnol gicos durante a o escolar. La recolecci n de datos se realiz a 22 educadores, 14 profesores y 8

directivos, mediante una encuesta y una entrevista estas, fueron informatizadas en los softwares Excel y CmapTools. Considerando que las TIC son un conjunto de herramientas potentes e innovadoras, se establece su uso tecnol gico para determinar el desarrollo de las inteligencias, y a la vez identificar como los alumnos se apropian del conocimiento. Las tecnolog as acompa an el proceso de ense anza y aprendizaje, tambi n son tiles para aquellos que aprenden en forma tradicional, porque permiten romper estructuras y ampliar estrategias de estudios. Finalizado el an lisis de los resultados, se manifiesta la importancia de implementar la WebQuest integrada al Aprendizaje Basado en Proyecto, para mejorar el aprendizaje en Historia con el uso de Tecnolog as de la Informaci n y la Comunicaci n, y favoreciendo las Inteligencias M ltiples.

Palabras claves: Tecnolog as de la informaci n y la comunicaci n; Inteligencias M ltiples; Aprendizaje Basado en Proyecto; WebQuest; innovaci n educativa.

Introduction

Instituto Adventista Florida (IAF) is a private, denominational school with three levels of education: kindergarten, elementary, and high school, and with more than 100 years of educational experience. It is located in the city of Vicente L pez, Province of Buenos Aires.

In this context and when reflecting on today's education, it is necessary to consider the ways of teaching and rethink strategies, so that the teaching and learning process is more meaningful for students.

When a basic diagnosis was made in History class, the use of traditional pedagogies to impart knowledge was noticed. This was evident in the students' poor ability to interact between theory and practice. Based on the belief in meaningful learning, a teaching proposal was designed, framed in an innovative format in which WebQuest (WQ) and Project Based Learning (PBL) interact, where technologies participate, which enhance the intelligences based on the following problem: What is the use that we can give to the Information and Communication Technologies (ICTs) to favor the development of Multiple Intelligences (MIs) in students of Higher Secondary Education (HSE), of Social Sciences of the Instituto Adventista Florida, in the learning of History during the period 2019 and 2020?

The research was based on a mixed methodology, intertwining quantitative and qualitative approaches, the former through a survey to measure the study variable, and the latter with an interview to interpret the category of analysis.

Information and Communication Technologies

ICTs allow the creation of learning scenarios with synchronous and asynchronous itineraries, which favor education in diversity and benefit the development of different intelligences. For this reason, when investigating the institutional context, it was considered that students should be able to relate their previous knowledge with new knowledge and experiences in order to modify or restructure what they have already acquired.

The search, selection, and analysis of the literature provided contributions on the subject of the study, and they give an account of it.

Information and Communication Technologies in the educational area have been in a place of privilege. The concept "revolve in an interactive and interconnected way, they allow to achieve new communicative realities" (Cabero, 1998, cited by Belloch-Ort , 2012, p.1). This meaningful exchange allows them to be linked through devices increasing communication. After some years, in the UNESCO report (2005, p. 29), ICTs

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are presented as central elements immersed in society for the "ability to identify, produce, process, transform, disseminate, and use information to create and apply knowledge necessary for human development." They are capable of processing, administering, and managing information which, in turn, is distributed through various electronic media.

Vaquero (2010), who speaks of technological resources as innovative, forceful, and useful for learning, argues that it is essential that educators recognize the importance of ICTs, and use them to facilitate the teaching of the so-called "digital natives." About this concept, Sunkel et al. (2014, p. 63) say that, "For the most part students will learn to use ICTs because they are generations that have been born inserted in a world that functions and is organized around digitalization and informatics." However, learning alone does not guarantee that they will take advantage of all the potential they have, nor that they will acquire competencies. Therefore, the contribution of Marqu s-Graells (2015), in the Conference "ICTs in Education," is considered valuable when stating that "The important thing is not to innovate, the goal is to improve the training of students and school success," so that being born in a digital world is not enough, it is necessary that teaching is accompanied.

Within this framework, Gabarda-M ndez (2015, pp. 3-10), from the Universidad Internacional de Valencia (VIU), conducted a research on "Equipment and use of ICTs in European and Latin American Educational Centers," focused on Information and Communication Technologies in similar and different educational contexts. The sample was carried out in five European countries (Finland, France, Germany, United Kingdom, and Spain) and five Latin American countries (Brazil, Argentina, Uruguay, Chile, and Costa Rica). The objective was to analyze the educational systems under the perspective of technological integration with the following criteria: equipment of the centers, curricular integration of ICTs and their use.

The conclusion reached was that both the United Kingdom and Spain are the European countries where students use the greatest number of computers per week, in addition to being the area with the most educational centers connected to the Internet. In relation to Latin American countries, the study revealed that 51.8% of students and almost 30% of teachers never use technological resources in the classroom. As for the use of computers, the average is one for every 27 students in Primary Education and 17 in Secondary Education. However, the Oriental Republic of the Uruguay has the highest rate of computers per student, one computer per student in each center. At the bottom of the table are Argentina and Costa Rica, with a marked decrease in the number of computers per student.
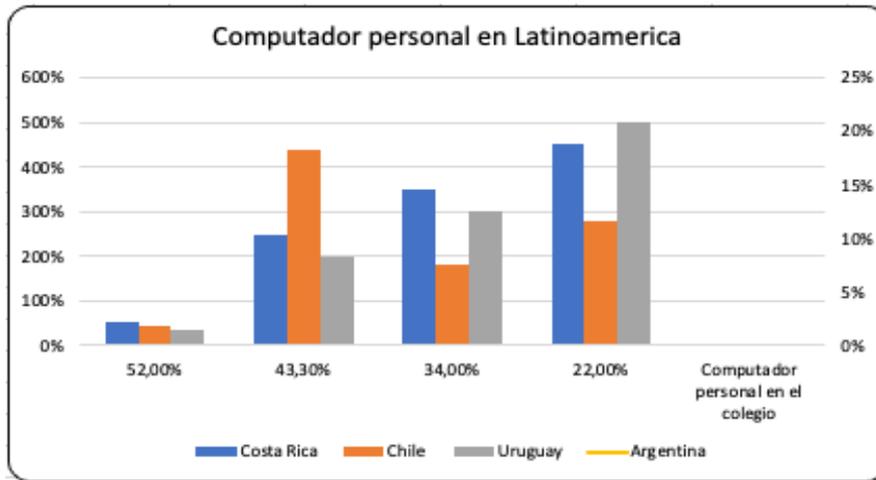
Figure 1. Personal computer in Latin America.
Note: The graph shows the results of the research conducted by the Universidad de Valencia, 2015.

The study provides interesting data: technologies in Primary Education are used as a tool at the service of the areas, and in Secondary Education they appear in the curricula. When comparing the equipment related to socio-digital inclusion of students and teachers on digital programs in Latin American countries, except in the case of Uruguay, it can be said that, without being the expected revolution, ICTs shape transformations in the countries of the region. In this way, the education system in Latin America opens the way to technological innovation with more flexible and creative educators, redefining the skills and abilities of both themselves and their students. As an example, Lugo and Delgado (2020) present countries that deployed proposals related to one computer per student. They are Venezuela with the "Canaima Educativo Project," Peru with the "One Laptop per Child Program," Uruguay with the "Ceibal Plan," and Argentina with the "Conectar Igualdad Plan."

From the conclusions drawn by the author, it is evident that technologies should be part of the educational environment to promote the integration and motivation of students. Hence, the importance of educational centers becoming learning spaces, where teachers, students, and technological resources are part of the Teaching and Learning process (TLP).

On the other hand, Parrón (2014 p. 94), assessing the Educational Policies of Latin America, says that "specialists warn that one of the changes observed with the introduction of ICTs is the breaking of classroom boundaries." This promotes leaving the traditional classroom in search of transformation and technological implementation in order to shorten the knowledge gap. The concept of school environments, presented by Costa and Bordignon (2012), is taken up by the author arguing that they are useful because they enrich the learning process, but he says, they have been slow. However, he highlights the Argentine government for implementing the "Conectar Igualdad Program," with the aim of reducing economic, social, and cultural inequalities, by allocating more than 200,000 notebooks to teachers and approximately 1,800,000 students in schools of the State Public Education System (SEGEP).

Within these innovative challenges, he states that, in some educational centers in the Provinces of Salta and Jujuy, technology has dynamized traditional strategies, betting on collaborative activities where good results are observed with the use of ICTs, such as, participation in the network, the creation and management of blogs and others that promote autonomous learning by establishing new relationships. However, he also points out that there are other centers where there is still inequality in the use of these tools.

The authors, Iriarte-D azgranados, C. et al. (2017, p. 21), state that the use of ICTs must be reflected in the classroom. "...it is urgent to establish and develop pedagogical

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practices or methodologies that guarantee meaningful learning, which enable the student to face a labor or professional context."

Marqu s-Graells (1999), quoted by Iriarte-D azgranados, has validated the interest in implementing flexible, dynamic, and interactive tools, so that students can actively participate in the construction of their own knowledge.

At the same time, for innovation to be inclusive, it is considered relevant to improve schools, physical infrastructure, digital educational resources, pedagogical coordination of ICTs, teacher training and updating, and their integration into the curriculum. In this sense, Marqu s-Graells (2011) emphasizes that the technological infrastructure offered by the new teaching and learning environments (TE) allows "taking advantage of the full potential of ICTs as a cognitive and learning support tool in general; students should have a computer whenever they need to access information on the Internet, communicate, process data, or perform self-corrective exercises."

In Argentina, the "Conectar Igualdad" Program was implemented through State policies in 2010 to improve the quality of education. The new resources aimed at teaching and learning, provided access to information and knowledge as a guarantee of equal opportunities. In 2018, the name of the program changed to Plan Aprender Conectados, with a comprehensive proposal of pedagogical and technological innovation, with central cores such as content development, technological equipment, connectivity, and teacher training for the development of digital education competencies, skills, and fundamental knowledge. It was later renamed Program.AR, incorporating, among other knowledge, environments with embeddable blocks such as Scratch Jr. and Scratch to ensure the learning of skills and knowledge through digital literacy.

In relation to ICTs and the approach to learning, it should be noted that, "It is possible that the use of different ICT applications has an influence on the mental processes that users perform for the acquisition of knowledge rather than on the acquired knowledge itself." Cabero, 1998, cited by Belloch-Ort , 2012, pp. 2-3).

The authors, Cenich, Araujo, and Santos (2017), facing the challenge of the 1-to-1 model of the Conectar Igualdad Program, conducted a case study. "Educational uses of ICTs and teaching cultures" in ESS in the cities of Tandil and Necochea in Argentina to address the innovation process. The research design was focused on the use made by teachers in mathematics classes with ICTs integration. Recovering some of the conclusions, the use of some applications for certain functions was weighted. Salinas (2004) states that the results of technological integration in educational practices as a process of innovation depend on the interpretation and implementation made by teachers. Although this study is not consistent with the subject of the present study, it is significant because it was carried out within the same province and in an SSE environment. Information and Communication Technologies are instruments that, when properly used, serve as a means for students to be part of the construction of their own knowledge.

Ausubel (1963), in his book "Psychology of Significant Verbal Learning," shares the concept of Significant Learning (SL), qualifying it as such to differentiate it from rote and repetitive learning. He bases it on the psychology of people and on a constructivist current. The model is based on discovery, privileging previous organizers and new acquired knowledge. For Ausubel, the concept of meaningful learning is to understand, hence the need for the teacher to know the students' prior knowledge. This will facilitate the establishment of connections between pre-existing concepts and new insights. In this way, the traditional teaching and learning style is redefined through the hierarchization of concepts, where the student collects, selects, and organizes information. By managing information, learning is more meaningful.

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Project Based Learning (PBL), presented by Ausubel, is a model with constructivist roots, which offers the educational field innovative strategies based on problems and challenges. It provides students with an education based on experience and action through knowledge, the development of their competencies and the formation of their critical judgment. There are authors such as Vergara-Ramirez (2016), who present PBL in seven steps, respecting higher order thinking processes, a process that goes from surprise to evaluation. First, the occasion is the birth of the project, then the intention, which are the first steps, followed by the look that designs the project, then the strategy that decides how to investigate and do, the action determines how to act and generate change, then the architecture that leads to the selection of useful tools, and finally the evaluation, which analyzes what and how to do it.

This model attempts to experience meaningful learning, is suitable for the development of inclusive, critical, and creative thinking, and places the student at the center of the EA process in such a way that the contents can present greater motivation for the intervention of ideas, creativity, and collaboration in achieving a final product.

Therefore, this proposal prioritizes the interaction of WebQuest and Project Based Learning. It is worth mentioning that Dodge (1995), who was recognized as the creator of the WQ, whose design is composed of the introduction, which provides the objective; the tasks where the activities are specified; the process, which establishes the steps; the resources; the evaluation; and the conclusion. Adell, (2006), qualifies it as an attractive and useful didactic strategy to deploy skills in the virtual environment, emphasizing the importance of its use to learn History.

Therefore, and according to Vergara-Ram rez (2016), in which learning is an intentional act and a practical action as well as useful, in this proposal for educational innovation, PBL and WQ interact, involving technologies and intelligences. To think of a project is to take into account the actors involved in order to generate the best activities. An example of this is (see) The Cold War, which to reach the structure it was necessary to approach the interests of the students and strategically interact in the assembly of the didactic programming to make it dynamic and collaborative.

lvarez-Herrero (2018) considers that WQ benefits learning by relating digital competencies with those others that satisfy the construction of knowledge. Therefore, it can accompany the management of PBL, considerably improving learning.

That is why, when referring to the study of history, Carretero and Montanero (2008) consider that the discipline has the responsibility to contribute to society's understanding of the historical evolution as well as to perceive the reason for the events. It is a complex discipline that involves abstract thinking; therefore, it is not easy for everyone to understand and assimilate it, so it is necessary to address the cognitive and cultural aspects. For this, ICTs can accompany the process.

Romero-Morante (2001 pp. 130-157) already qualified the use of technological resources in the study of history as important. He argues that they can predict innovation or simply mask a traditional framework. ICTs should enhance the set of students' abilities or intelligences, which is why it is necessary to implement pedagogical proposals with simple and effective tools; for example, design presentations where it is possible to transmit ideas, images, or graphics with quality information. The author enriches his presentation by proposing the use of maps with interactive challenges, Google Maps, or Google Earth to explore and find countries or geographical areas, and to investigate their organization in time and space. In this way, individual and collaborative learning is stimulated by accessing the knowledge of the historical context.

The author concludes that well applied ICTs will be a valuable resource for developing competencies in educational challenges.

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Adell, et al. (2018), reflects that the use of technology contributes to a new way of being a teacher. Undoubtedly, there is a paradigm shift where, among other resources, digital whiteboards, E-books, and mobile devices intervene, highlighting the need to act to be in line with reality.

Multiple Intelligences

Gardner (2001), American psychologist and educator in the eighties, presented a model of conception of the mind, called "Multiple Intelligences." A new vision that broadens the scope of human capacity, going beyond IQ, breaking with the traditional model of intelligence, exposing that they are a set of talents, skills, and abilities that interact autonomously. They operate in an independent way and at independent levels; their work is coordinated to solve complex contexts.

For Antunes (2008), the fact of thinking in MI triggered a plural perception of the mind where biological factors are related, those that make it possible to generate and develop cognitive abilities and skills. This responds in certain circumstances to the interaction of the human being, in the case of acting individually and even more, when acting collaboratively. For example, when he can excel when playing a musical instrument, when playing field hockey, when reasoning in a logical-mathematical way, or when he can tell a story. These actions motivate, excite, and give the student confidence.

It should be noted that Valverde-Berrocoso, et al. (2010), in " Educational policies for the integration of ICT in Extremadura," state that even if there are improvements in classroom equipment and programs present innovations, there will only be success when teachers implement them to develop competencies.

Castro-Vega et al. (2014) also refer to the need to strengthen teaching strategies by promoting Multiple Intelligences. The proposal carried out by these authors was in a Colombian institution, combining games and technologies. They concluded that improvement would be more favorable with pedagogical intervention.

Gabarda-M ndez (2014, p. 4), in " Multiple Intelligences, a teaching perspective," states that, by considering the TMI as a disruptive approach within psychology, it expands to education, this is a substantial paradigm shift by moving from "a rigid, homogeneous concept where the assessment of academic results predominated to a much broader and heterogeneous vision of intelligence." Gardner (2005), quoted by the author, also emphasizes the possibilities that teachers have in promoting the types of intelligences in a simple and practical way. The following is a reference to proposals considered significant for the area of History and its context.

Linguistic Intelligence: It is possible to use books and reading materials, organize contests that enhance the learning of the study content, play board games, or online games, such as Scrabble.

Logical-Mathematical Intelligence: Different classifications, enumerations, data graphs can be used through a logical construction. Also, strategic games that respond to the theme of the moment.

Body Intelligence: It is comforting to relate the movement of a direct skill, when listening to music with historical reference, as well as to interpret it in a corporal form and that at the same time has relation with a content of study, an example would be an Egyptian, Arabic dance or a tango that make reference to a certain culture.

Spatial Intelligence: It is convenient to use graphic arts through books and audiovisuals such as videos, animations, and presentations from computers.

Musical Intelligence: It is possible to use music to carry out the proposed activities, such as introducing sounds and basic musical instruments. Always according to the topic of study, such as native music.

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Naturalistic Intelligence: Using geographic spaces and organizing outdoor activities or excursions to historical museums in virtual form is favorable for studying space and thinking about the context in a natural way.

Interpersonal Intelligence: Collaborative work groups can be organized where students interact, conduct discussions, and other training activities.

Intrapersonal Intelligence: It is important to reflect, verbalize decision making, and motivate capabilities on a constant basis.

Armstrong (2017) highlights the Theory of Multiple Intelligences (TMI), recognizing Spearman (1923), who presents the dimensions on how the aptitudes configure intelligence, the contents or perceptions, and the ways of operating. Everything that involves the procedures and the final product.

The great challenges of MI also serve as a support to manage diversity and accompany the processes of integration and inclusion of students, those with special needs and those with high abilities. It is a way to value and experience personal skills. And even more so when ICTs are used in educational proposals.

Currently, the knowledge model, Technological Pedagogical Content Knowledge (TPCK), was presented by Gonz lez (2017) as novel and necessary in academia. A proposal that should be considered when implementing technologies effectively in educational practices. The knowledge that integrates it was contributed by Koehler and Mishra, in reference to disciplinary (CK), technological (TK), and pedagogical (PK) contents. They state that the success in using ICTs in education will be when the teacher manages to articulate his knowledge with the specific content in a deep and quality way, and then add technology to it.

L pez-Espinosa et al. (2018) comment on the importance of facilitating ICTs to interact in teaching, and that, in turn, it favors the development and acquisition of skills that allow the teacher to use tools and applications in a didactic way in learning environments.

In order for these concepts to be optimal for learning, the permanent changes established by the Information and Communication Society, which are neither automatic nor immediate, must be taken into account. For this reason, State policies on ICTs in the pedagogical environment are needed. Lugo (2016, p. 119) says that, "This translates into the need for digital technologies to be at the service of innovation processes and improvement of the quality of student learning." For this to become a reality, the focus should be on teacher training; it is worth considering that several countries in the region are already providing a training space on the use of these strategies.

For Fern ndez-Piqueras (2009, p. 115), teacher training is important because of the need to have "an intercultural attitude and aptitude, mediated by very significant aspects with current technologies, which break the simultaneity of space and time in which different cultural models are present".

Marcelo (2013, p.30) states that "innovation needs innovators." In any environment there must be people who are excited and committed to implement changes in the usual practices.

This project was designed to strengthen the learning of History with the use of ICTs, in addition to privileging the skills of the intelligences; for this, teachers and managers with continuous training are needed, capable of looking to the future and accepting the challenges promoted by the information society. The purpose of the study is based on incorporating powerful and innovative educational projects, with resources such as WebQuest as a support and complement to PBL, deepening the skills to improve learning. In this opportunity, the main hypothesis is highlighted, "The greater the use of Information and Communication Technologies, the greater the development of Multiple

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Intelligences in students of Higher Secondary Education, of the Social Sciences modality of the Instituto Adventista Florida and the learning of History in a secondary school case." And the secondary schools:

- 100% of the ESS students of the Social Sciences modality of the Instituto Adventista Florida, during the 2019 - 2020 period, use Information and Communication Technologies in the subject of History.
- Students use at least six types of Multiple Intelligences in the study of ESS History of the Social Science modality at Instituto Adventista Florida during 2019 - 2020.
- The level of learning in History, on the part of ESS students of the Social Sciences modality of the Instituto Adventista Florida during the 2019 - 2020 period, is advanced.

Method

The inquiry was focused on a case study, where Multiple Intelligences and Information and Communication Technologies were combined; for this, it was necessary to consider new ways of teaching in different scenarios. A mixed approach research, of non-experimental type and concurrent triangulation design, DIATRIC, where the concepts of the study variable and the category of analysis converged with their own characteristics.

The IAF's Secondary Education population, at the time of the study, had 340 students. The research was designed on the 74 students of ESS of the Social Sciences modality (4th-6th year). Fourteen teachers participated, 12 teachers of Social Sciences and 2 of Educational Informatics, plus 8 directors: general director, vice-directors, pedagogical advisors, and specialists of the school orientation team (E.O.E.). They all responded to the survey on the "Academic use of ICTs in History" and to the interview "The application of Multiple Intelligences." The instruments used were created with Microsoft Forms and processed with Excel and CmapTools personal management software.

For the opinion survey on the use they make of technology, a Likert scale with five levels was used: Always, Almost always, Sometimes, Almost never, Never. And for the interview, questions were asked about what resources they consider important to develop the skills of the intelligences.

E.O.E. professionals and teachers from the area participated in the development of the tools, providing support and guidance. Once the options were created, they were sent to four experts for consultation. After including their contributions, the pilot test was applied, and later the same was done with the research subjects.

The information to explain the variable was extracted from 16 questions on the (see) "Academic use of ICTs in History" of the survey. It was applied to twelve History teachers, two Educational Technology teachers, and eight directors, focused on activities where technology benefits the skills of the intelligences.

For the analysis, an operational average was established between 80% - 100% as favorable response, being greater than or equal to 80% of the total of the subjects interviewed. The responses related to the options Always or Almost always were considered unfavorable with responses equal to or less than 79% of the total number of respondents, related to the options Sometimes, Almost never, or Never.

The information to explain the category (see), "The application of Multiple Intelligences," was extracted from the interviews conducted on what they considered

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important to develop the skills of the intelligences. For this treatment, CmapTools was used as management software to classify and analyze the data obtained.

In order to investigate the academic use of ICTs and interpret how the intelligences are applied in History classes, it was decided to find out how students learn. Therefore, two instruments were used to collect information, a survey and an interview. The first one to measure the students' opinion regarding the acquisition of knowledge, with the items of the dimensions of learning, according to Kolb (1984): divergent, assimilative, convergent, and accommodative (see), <u>learning styles survey</u>. And the interview was focused on the aspects considered useful for the appropriation of skills, (see) <u>use of resources and skills in class.</u>

Results

Educational professionals

In each of the tests, the items of the instruments used were analyzed, always within a referential and theoretical framework. In the case of the survey on the study variable, "Academic use of ICTs in History," there were 16 queries measured with a Likert scale in order to endorse its application and preserve the reliability coefficient. The participating groups stated statements or judgments.

The 16 items on the use of ICTs in classes to favor the skills of the intelligences in History are presented below.

- The first one refers to whether "They present activities for the student to develop word processing skills."
- The second, if "They present audio recording activities for the student to develop interviewer skills."
- The third asks, "Do they present activities with mind maps so that the student can develop synthesis skills."
- The fourth, whether "They present playful activities so that the student can develop coordinated skills".
- The fifth question, "Do you present activities so that the student can develop information search on the Internet."
- The sixth, if "They present activities so that the student can develop musical skills."
- The seventh, if "They present activities for the student to create visual or audiovisual/multimedia presentations using ICTs."
- The eighth question asks, "Do you provide activities for the student to film?"
- The ninth, if "They present activities so that the student can develop graphic skills mediated by generators."
- The tenth question, if "They use virtual platforms to accompany the teaching and learning process."
- The eleventh, if "They use the institutional computer lab and/or digital classrooms."
- The twelfth question, "Do you use technological tools for the development of methodological projects?"
- The thirteenth question, whether "They use ICTs in teaching history."
- The fourteenth, whether "The use of technological resources in the classroom serves to process information skills."
- The fifteenth examines whether "The use of technological competencies in the classroom favors collaborative work."

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- The sixteenth, whether "The use of ICTs in the classroom is useful in problem solving."

Table 1 shows the total percentages of favorable and unfavorable per question of the survey.

Table 1
Summary answer by question.

Questions	Teachers		Managers	
	Favorable	**Unfavorable**	**Favorable**	**Unfavorable**
1	93	7	100	0
2	57	43	50	50
3	79	21	75	25
4	79	21	75	25
5	86	14	88	13
6	50	50	63	38
7	86	14	100	0
8	64	36	75	25
9	57	43	75	25
10	100	0	100	0
11	79	21	75	25
12	86	14	88	13
13	100	0	88	13
14	93	7	100	0
15	100	0	75	25
16	93	7	63	38
Average	81	19	81	19

Note: The totality of favorable and unfavorable responses of the research subjects is observed.

Figure 1 shows the total average of favorable and unfavorable responses to the use of ICTs in history classes.
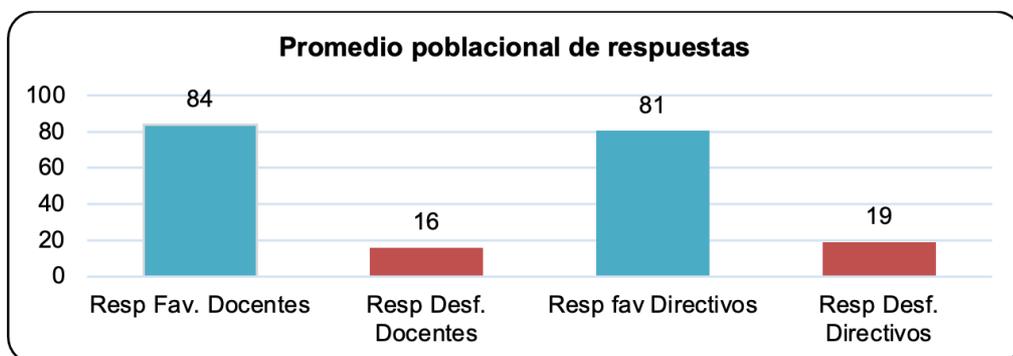
Figure 1. Population average of responses.

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Note: Symbology: Resp. = response; Fav. = favorable; Unfav. = unfavorable.

In the interview on the category of "The application of Multiple Intelligences," 10 questions related to the development of intelligences were asked to the same research subjects. The data were processed and presented through the management of CmapTool. The queries made are presented below.

- The first question asks what ICT resources do you consider important for developing communication skills?
- The second, what aspects do you consider important to develop spatial skills?
- The third, what aspects do you consider important to develop logical-mathematical skills?
- The fourth, what aspects do you consider important to develop body skills?
- The fifth, what aspects do you consider important to develop musical skills?
- The sixth, what aspects do you consider important to develop interpersonal skills?
- The seventh question, what methodological projects do you use in your classes that favor the development of Multiple Intelligences or skills?
- The eighth, what are the skills that are developed in your classes?
- The ninth, which skills were most developed in your virtual classes?
- The tenth, what is the use of the computer lab and/or mobile classrooms?

Table 2 shows the skills with the greatest coincidence among the research subjects by question.

Table 2
Highest matching skills

Questions	Educational professionals Outstanding MI skills
1	• Word processors, • Read.
2	• Mind maps, • gamification.
3	• Mental calculations.
4	• Balance, • displacement.
5	• Singing, • use instruments.
6	• Collaborative activities.
7	• ABP.
8	• Cognitive, • linguistic.
9	• Communication, • information management.
10	• Collaborative work.

Note: The table shows the skills with the highest coincidence in the research subjects.

The response of the participants was based on their teaching work, emphasizing methodological projects, specific learning skills, the use of the laboratory and the mobile classroom.

The statistical results of the survey respond to the use of ICTs, and those of the interview express the use of technologies to favor the skills of the intelligences.

Alumni

Figure 2 shows the results of the survey on the dimensions of ways of learning. Concrete experimentation, EC; abstract conceptualization, CA; active experimentation, EA; reflective observation, OR; and the totals of the answers given. The survey had the purpose of knowing the students' strengths in order to achieve better results; it was conducted on the 74 ESS students of Social Sciences and processed in Excel software.

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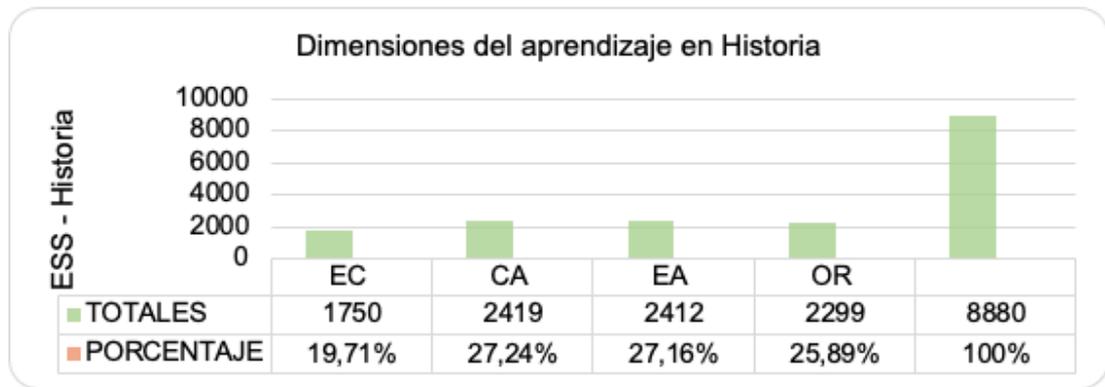
Figure 2. Learning dimensions in percentage.

The interview with the students was designed to focus attention, synthesize, verify, and see their point of view. The questions were the following.

- What did you think about working with technological resources in History classes?
- What was the resource that caught your attention the most?
- What concerns did it generate in you to work with different resources?
- Were you able to understand the historical period of work?
- What is the argument to prove that you appropriated the knowledge and in turn the resources?
- What did you do well and what should you continue to do to keep building your knowledge?

This yielded some significant results. In the first question about whether they used ICTs in class, 70% answered always, 25% almost always, and 5% sometimes. The second question, related to the resource of greatest interest, the result was 40% for dynamic presentations and 33% for timelines. Word processors and the use of videos resulted with the same percentage, 11%, closing with 5% other resources. The third question concerning the use of technology, 65% responded that it helped them to understand the subject, 33% motivated them to study and continue researching, and 2% were bored.

In the fourth question, which deals with the comprehension of the historical period, all of them answered yes, and in the fifth question whether they were able to appropriate the knowledge, 93.3% answered in the affirmative as opposed to 6.7% who answered in the negative. When asked about the appropriation of knowledge, there were favorable answers, some examples, 'To recognize historical stages previously unknown,' 'to be able to understand and give an opinion,' or 'To explain the subjects with my own words.'

In the question about what to do to continue building knowledge, 5% responded that they do not know, the rest of the answers were significant. Examples such as, 'adapt to changes,' 'do good comprehension of texts,' 'put more work effort,' and 'befriend technology'. And among others, 'study what I am interested in,' 'research, read, reason,' and 'watch documentaries.'

The proposals designed for the students were answered individually and could also be discussed. The answers were analyzed, processed, and graphed in Excel software for further information.

The concurrent triangulation design study, DITRIAC, favored the meeting of findings between the routes and the theories consulted. In such a way as to cement the

interpretations extracted from the information collected and to highlight them as possible convergences.

In general terms, it should be considered that the survey, for the sole purpose of the study, is favorable for the research subjects, teachers, and managers because it reaches the established parameter of 80% according to the operationalization.

The "Tools for word processing," such as Microsoft Word; "Tools for the use of presentations," PPT, Tiki-Toki, and Prezi; "Learning environments" and "Use of ICT resources for information processing" stood out with 100% over the established parameter of 80%.

The rest, such as mind maps, gamification, film production, and others that favor problem solving are gradually being consolidated, as are laboratories and mobile classrooms. Three are below expectations, those for musical use, audio recorders, and graphic generators.

As a result of the interview, teachers emphasize communication, body, music, and interpersonal development skills. In the methodological context, Project Based Learning, the development of cognitive skills in the classroom, and communicative skills in other learning environments stand out. Differences were observed with the responses of the managers who emphasized logical-mathematical, bodily, and musical skills. However, they coincide in PBL, also in the cognitive proposals in different environments, the major finding recorded among the interviewees. The use of the laboratory/mobile classroom was perceived as very favorable for developing computer programs, while teachers mentioned it in a lower percentage.

The qualitative analysis allowed for an interpretation of the teachers' opinions on how to develop the skills.
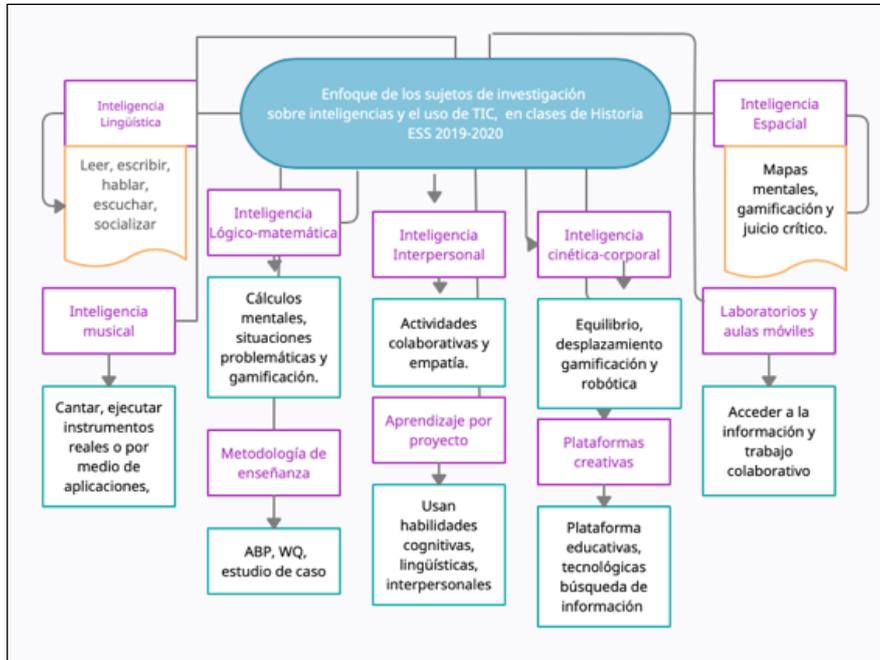
Figure 3. Relevance in the category of analysis.

Note: The research focus on MI and the use of ICTs can be seen. Own elaboration.

Discussion and conclusions

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The survey determined that text processing tools, the use of dynamic presentations, learning environments, and the use of ICT resources to process information were considered as the most outstanding technological proposals in the teaching of History. The data extracted from the interview emphasized cognitive, communicational, corporal, musical, and interpersonal development skills in a methodological context where Project Based Learning predominates. Although these data are encouraging, it does not imply that the acquisition of knowledge is automatic; therefore, methodological components are necessary to generate knowledge.

The extracted findings are related to the objectives of the study, all related to the ESS students of the Social Sciences modality of the Instituto Adventista Florida during the 2019 - 2020 period. The first one, to establish the use of Information and Communication Technologies in the learning of History, which was assisted by the treatment of the study variable `Academic use of ICTs in History,' with the main finding the `learning environments,' referring to the use of virtual platforms both e-learning, b-learning in the teaching and learning process.

The second objective, determine the development of Multiple Intelligences in the study of History, was established through the category of analysis `The application of Multiple Intelligences'; determining that the `communication skills,' which respond to the Linguistic Intelligence in which the skills of writing, listening, speaking, reading, and socialization have an impact, are the most outstanding ones.

And the third, identify the learning of History, with the findings extracted from the routes and theories consulted, allowed finding convergences between the variable 'Academic use of Information and Communication Technologies in History,' and the category of analysis, 'The application of Multiple Intelligences.'

Limitations

In analyzing the results of the research, there are some points that could be improved in order to provide comprehensive teaching.

While it is true that there are good proposals with technological uses and attempts to deploy skills, it is necessary to delve deeper into the techno-pedagogical field so as not to lack support. Technologies are powerful tools that are reflected as teaching and learning alternatives; however, they should adapt to new models and move away from old paradigms to favor transformation and change.

Developing the skills of the intelligences through strategies should be a turning point, with interdisciplinary experiences for the progress of all.

For this reason, the educational institution must be involved in improving technological equipment, and favor professional training on an ongoing basis.

Implications and proposal

According to the context, when opening the doors to the new challenges of the 21st century, it is necessary to generate a new organizational culture that incorporates educational innovation.

Students today have the knowledge of some digital systems and, by the mere fact of being familiar with their use, they are favorable for teaching disciplinary contents. Hence, an innovative proposal, where the teaching is framed in the WebQuest format, interacting with the PBL, always accompanied by strategies that have the purpose of making the classes more enjoyable, where the students learn to use them make the classes more enjoyable, where students learn based on the use of ICTs and the development of the skills of the intelligences.

Nowadays, computational thinking is promoted, as it favors logical reasoning, management and learning to solve problems. This benefits the expression of ideas,

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sharing solutions, designing and creating through games, and programming environments. And to dynamize the classes and the learning of History, at a certain moment the use of Scratch and Micro bit was implemented, involving the learning of programming language in blocks, in addition to the board, both focused on creativity and logical thinking. This presents a great opportunity to work multidisciplinary projects, where teachers of Science and Technology area can be a part of and teach these programs, forming a pedagogical partner in order to clear all doubts.

It is highlighted that, in order to identify students' learning in the teaching context by relating the academic use of ICTs in History, with the ways in which teachers consider applying Multiple Intelligences, it is conclusive to respect students' ways of learning.

The incorporation of more powerful and innovative instruments serves to learn how to use the tools, strengthen the intelligences and, thus, learn history in a more meaningful way. Therefore, the research hypotheses were accepted.

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THE NO PLACE OF CHILDREN'S HEARING IMPAIRMENT IN THE LISTENING CULTURE

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Summary. The research, from which this writing derives, aimed to identify the cultural realities in which a group of 24 children with hearing disabilities, together with their parents, attached to an important educational institution that city of Villavicencio (Colombia). The methodology was developed from the qualitative research paradigm, using as collection strategies: the interview, social cartography, and the discussion group; After collecting the data, each of the testimonies was analyzed using the ATLAS.ti 9 software. In the results section, a description of the various forms of rejection is presented, which operate in very similar ways in three different scenarios, and are exercised from the majority culture towards the disabled population. These scenarios are: in the first instance, the family space, later the school is analyzed as a training space and, finally, a look at the neighborhood environment is given. As a general conclusion, it is evident within the presentation of results, the non-existence of a place for children with hearing disabilities, within the listening culture. The assertion is made given that it is observed in several testimonies which reveal that, in the three contexts, all kinds of adverse environments are generated. In a similar way, the existence of the phenomenon of exclusion is also evident, which is exercised from a listening majority, of the Spanish language, towards a signing cultural linguistic minority.

Keywords*:* context, disability, school, training, deaf.

EL NO LUGAR DE LA DISCAPACIDAD AUDITIVA INFANTIL EN LA CULTURA OYENTE

Resumen. La investigación, de la cual se deriva el presente escrito, tuvo por *objetivo* identificar las realidades culturales en las que se ha visto un grupo de 24 niños(as) con discapacidad auditiva, junto con sus progenitores, adscritos a una importante institución educativa que la ciudad de Villavicencio (Colombia). La *metodología* se desarrolló desde el paradigma cualitativo de investigación, usándose como estrategias de recolección: la entrevista, la cartografía social, y el grupo de discusión; de manera posterior al levantamiento de los datos, cada uno de los testimonios fue analizado a través del *software* ATLAS.ti 9. En el apartado de los *resultados,* se presenta una descripción de las diversas formas de rechazo, que de maneras muy similares operan en tres escenarios distintos, y se ejercen desde la cultura mayoritaria hacia la población discapacitada. Dichos escenarios son: en primera instancia, el espacio familiar, posteriormente se analiza la escuela como espacio de formación y, finalmente se da una mirada al entorno barrial. Como *conclusión* general se evidencia dentro de la presentación de resultados, la no existencia de un lugar para la niñez con discapacidad auditiva, dentro de la cultura oyente. La aseveración se hace dado que se observa en varios testimonios los cuales revelan que, en los tres contextos, se genera toda suerte de entornos adversos. De similar forma se evidencia también la existencia del fenómeno de la exclusión, la cual se ejerce desde una mayoría oyente, de la lengua castellana, hacia una minoría lingüístico cultural señante.

Palabras clave: contexto, discapacidad, escuela, formación, sordos.

Deafness is not only a medical diagnosis,
it is a cultural phenomenon in which patterns and social problems interrelate, emotional and
linguistic (Oliver Sacks).

Introduction to the subject of study

One of the most frequent questions in disability studies is the following: *What spaces are considered safe for children?* Based on this question, it is assumed that children require spaces that enhance their personal development -such environments-, spaces that may be in favor or against such *development*. Based on the above, the role as parents (Cuervo, 2010) implies the need to dimension the different spaces for the child's development; this inasmuch as thinking about education and pedagogy (Bolaños, Casallas & Sabogal, 2020) for the different childhoods[1], indirectly determines how to think about the environment of childhood in its own complexity of possibilities. Thus, this research seeks to expose the realities of a group of 24 hearing impaired children, together with their respective families, all attached to one of the educational institutions of the city of Villavicencio (Colombia), an institution where deaf and hearing children are attended equally.

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[1] The children's parents, during a good part of the research process, also took part in school educational processes, with exercises aimed at strengthening Sign Language.

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Regarding the context of the research, it is necessary to make a general clarification about the present text. Although the human group, in its totality, is part of the aforementioned educational[2] institution, the data emerged from three different contexts: *the family*, the *school context*, and finally, *the neighborhood*. It was thought from the beginning that the three mentioned spaces constitute a relevant triad in the study of childhood, so we sought to offer a broad view of this phenomenon, observing the experiences of a specific population. The expansion of the information collected implied dimensioning two human groups: first, the majority hearing population and then, the minority population in a situation of functional diversity. As it is expected to be developed in the space of the results, the research actors agree that children with hearing impairment are excluded from the majority culture. This is due in part to the marked differences in the order of language, originating a *no-place* within the social group to which the deaf population would eventually like to have access. While it is clear that one of the purposes of modern states (Laval and Dardot, 2013; Laval and Dardot, 2015) is to enable safe spaces for the personal fulfillment of the commoners; although there are safe spaces *for some,* these same spaces are not equally safe for the deaf population. In terms of the actors with whom the present research was conducted, a group of experiences was analyzed, of 24 children with hearing impairment, who -in their diverse contexts-, are exposed to various forms of exclusion.

It was deemed necessary to inquire about the inclusion needs that arise in the *family* since it is estimated that this is the first experience of life in community (Jaramillo *et al.*, 2014) for children with hearing impairment. At the same time, it is estimated that the *school* is a space where actions or omissions can cause difficulties in inclusion. It is in school where the needs of each [*disabled*] individual must be given primary attention within the general needs of the normal [or hearing] student body since: "inclusion presupposes individualized levels of didactic objectives compatible with each student" (Souza, 2006, p. 357). The third context addressed, *the neighborhood*, was investigated in the present study since it was considered necessary to identify "the contextual factors that may constitute barriers to participation... (assessment, diagnosis, and intervention) in a comprehensive manner because it promotes the recognition of the impact of the environment [towards a] modification through particular actions" (Serrano *et al.*, 2013, p. 42).

Regarding the cultural relationship between the deaf population and the context in which it interacts -if it is about background-, there is research on topics such as deaf culture (Paz & Salamanca, 2009), the hearing-impaired minority as a population within the cultural framework (Pérez de la Fuente, 2014), identity (López & Llorent, 2013), and interculturality at school (Morales & Morales, 2018). However, once the state of the art was conducted, it was possible to identify that the literature on cultural environments is not equally satisfactory, so it was considered possible to contribute to this field of knowledge, based on this paper. In this order of ideas, Marc Auge (2000) raises the possibility of understanding the phenomena of urban spaces, from the "anthropology of the close" (p. 15), attending to those people who do not have *a place* within globalizations. Auge says that urban environments are a phenomenon of a modernity among different, thus originating a *no-place,* as a distance between the spectator and the spectacle, the spectator being the subject and the spectacle, its culture.

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[2] The research began with 24 people; however, by the year 2020 there were parents who changed housing location, or changed educational institution, so that by 2020 and 2021 there are only 18 households.

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It was determined that the object of study would be the phenomenon of exclusion (López, 2008), which is estimated to be exercised by the majority group towards a human group with hearing impairment. From the beginning of the process, it was suggested that the research question would be the following: *What impact does the context in which the child with hearing diversity lives and interacts have on the good practices of school inclusion and citizenship of the hearing-impaired child in Villavicencio?* That is why it was proposed to investigate the different cultural environments on the processes of inclusion or exclusion, exercised within human collectives.

Some key concepts. Inclusion, language, and culture

Throughout the history of the Social Sciences (Iglesias and Martín, 2019), the concept of *inclusion* has been the standard-bearer -and perhaps responsible- for ensuring attention to differences to the excluded and to those who are left behind in their various manifestations. Today, the importance of the concept of inclusion in scientific work is undeniable and -although there are new perspectives in this regard- it is also undeniable that, under this concept, multiple rights -formerly denied- have been won to *the various forms of functional diversity*. On the other hand, diversity is seen as a richness that underlies the cultural and/or linguistic order since "there is no risk but richness in linguistic and cultural diversity, provided that contexts of communication between differences are created" (Fridman cited by Gómez, 2013, p. 95). However, on many occasions -and *it is cruel to say it*-, the existence of a signer [hearing impaired] in the family tends to be seen more as a calamity *by the collective*, than as a factor of linguistic and cultural richness already mentioned.

Then, inclusion taken to the school context implies dimensioning "safe spaces for children that provide support for learning, development of competencies, and psychosocial interventions" (UNICEF, 2008, p. 34); however, diversity also implies conflicts to the detriment of the "most vulnerable or disadvantaged, as they are the ones most exposed to situations of exclusion" (Belén, 2009, p. 46). In this order of ideas, it was determined to approach inclusion from a cultural perception, where through the *culture-language* relationship, inclusion could be observed through the relationship between both concepts. Thus, when investigating the concept of language, it is indicated that making good use of language "also requires metacognitive, cognitive, and affective skills to make conscious and functional use of language" (Miranda, 2011, p. 163), language being understood as: "a set of signs, symbols and signals... that has a context of use and certain formal combinatory principles" (Pozzo and Soloviev, 2011, p. 176). Then, establishing a language-culture relationship, it would be said that it is a "set of cultivated ways of thinking and living, usually designated by the name of civilization" (Altieri, 2001, p. 15). Thus, the notion of the *national* collective -or normal- can thus come to exclude differences in their various forms of disability. In this regard, the following are established:

> consequences concerning the relationship between language and the so-called national culture and identity. On the one hand, it necessarily entails socio-political conflicts, since it promotes one of the languages (and their native speakers) to the detriment of the rest. Moreover, the resulting hierarchization brings with it the tendency to associate the language promoted in each country with the so-called national culture (Ambadiang and García, 2006, p. 69).

Finally, there are multiple concepts within the present study, and the complexity of such contexts is related to the dimensioning [at a very general level] of aspects, such as culture, language,

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and inclusion. Consequently, it was thought to develop an "investigation in an urban conglomerate... [in which it would be possible] today of an anthropological investigation" (Auge, 2000, p. 23). In the same way, this paper intends to recognize the different places where auditory diversity manifests itself in order to "deconstruct them, although knowing that it is useless to hide their positions because no matter how much you try to speak from a *no-place*, you will never succeed in making the world an aseptic spectacle" (García, 2005, p. 97) or at least distanced from the researcher. All of the above indicates the need to create bridges between the various research competencies, as well as interdisciplinary research with a similar object of study in order to generate laboratories of inclusion in the various contexts.

Research methodology

The research presented here was intended to generate a broad interpretation of the social realities (Alvarez & Jurgenson, 2009) of a group of parents who face a majority culture that is [or has been] adverse to their children with disabilities. The research approach was qualitative (Pasek, 2008) and sought from the beginning to describe the realities of a group of hearing-impaired children in their respective contexts. Thus, dialogues were generated with various research actors, so that they would reveal aspects of their life stories (Huchim and Reyes, 2013; González, 2019), evidencing their experiences in three different contexts. To this end, it was necessary to employ three research collection strategies, activities that will be succinctly presented in the following lines.

1- The interview. At first, it was carried out with the parents of the disabled children and in the educational institution. Then, around March 2019, these activities - due to the confinement measures - were carried out through magnetic meetings by cell phone and computer. In these dialogues, we sought to identify in depth the life experiences around the disability of their child, to understand "the life of the other, to penetrate and detail the transcendent, to decipher and understand the tastes, fears, satisfactions... relevant to the interviewee; it consists of building step by step and thoroughly the experience of the other" (Robles, 2011, p. 40).

2- Social mapping. It was implemented at the same time as the interviews in which it was intended that the children with functional hearing diversity would express their contextual realities. A good part of this activity was accompanied by the parents, who generated new and valuable data for the present study. Thus, social mapping sought to generate "a map of networks and semiotic relationships that is built from subjectivity at the individual level and from the collective thinking of the communities" (Bolaños, Astaiza and Jiménez, 2020, p. 13).

3- The focus group. This was one of the last activities of the research process. It was carried out with three teachers of the educational institution, knowledgeable in Colombian Sign Language, who communicated the realities of hearing-impaired children in their educational institution. The group interviews took place at the educational institution, and with them, we sought to find all kinds of answers and questions about the same questionnaire (Belén, 2003). Finally, in search of quality criteria, an analysis group was managed, so that "new ideas and ways of seeing things and those that have been studied" could be found (Flick, 2014, p. 92). It is also necessary to indicate that, although the authors are aware that "it is considered that the adequate number [for a focus group...] is given from five people" (Arboleda, 2008, p. 73), it was not possible to count for the

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session with a number greater than three people for the research. At the same time, it was intended that the persons invited to the session should all be equally suitable, and that their corresponding speeches should have equal value within the data collection. With the above, we sought -from different points of view- to broaden the conception of the attention to the social and cultural problems of children with hearing impairment. Later, the data collected were categorized and analyzed through the ATLAS.ti software (9Kalpokaite and Radivojevic, 2018), thus originating the first research categories and subcategories of this study (See Figure 1).
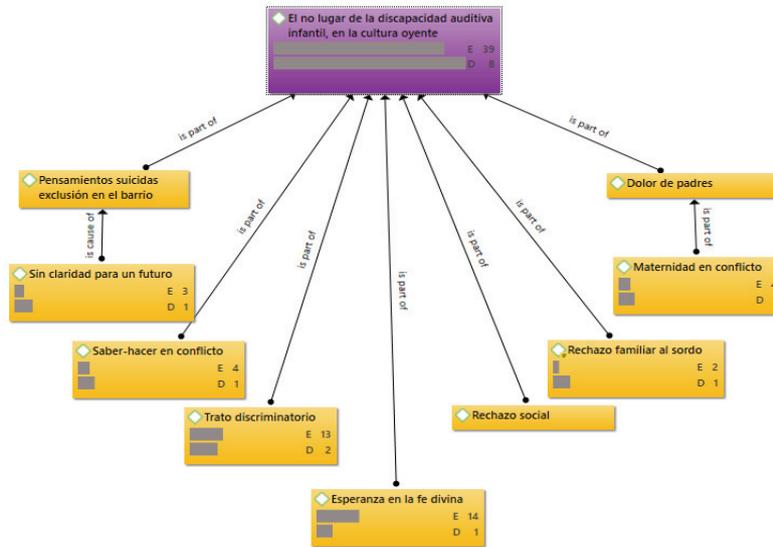
Figure 1. Diagram created in ATLAS.ti
Note: Source: Own elaboration.

The category: The no-place of childhood hearing impairment in the hearing culture generated 39 points of rootedness in the testimonies issued by the research actors, and 8 points of density in relation to the research subcategories, which is why it was determined that this would be the guiding category of the present presentation of research results.

Results

From the research process carried out in 2019, 2020, and 2021, it was possible to generate as a result the central category of this text, which refers to the relationship between *deaf children and hearing people* and is called: *The no-place of children's hearing impairment in the hearing culture.* This category is expected to be broadly exposed in the following pages, with the help of *three* subtitles that indicate the various cultural contexts [see figure 2] on which the data offered by the population approached were focused; contexts in which the non-existence of a place for deaf children is estimated.

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The no-place of children's hearing impairment in the hearing culture

The family

One of the characteristics observed in many of the testimonies given by parents is the fact that they recall -as *a historical exercise- how* they discovered their child's deafness. Many of them -when recalling- say that when they saw that their offspring did not "pay attention" to them, they talked to their child, with a louder and louder voice, and then *yelled at him/her,* hoping that with this "strategy" they would listen to them. Thus, it is understood that shouting at the child would make him/her "listen or understand" their message in Spanish. In this regard, the testimonies coincide in that:

> You have to talk to him very hard, we thought... We talked to him hard and showed him the things we wanted... We talked to him hard and held his face so he would understand us... We yelled hard, so he would lend us the ball [they told anecdotally]... We yelled hard... I point things out to him because it is difficult to learn sign language... We talked hard so he would understand, and I point things out to him, I show him things... I show him things... When he comes [to try to integrate]... we talk to him hard and touch him [but] nothing... Sometimes we have to talk to him hard and touch him, [but] he does not understand. I show him things and talk to him really hard... When he comes [to try to integrate]... we talk to him hard and yell at him [but] nothing... Sometimes, we have to talk to him hard and touch him, so that he listens and I point to him or show him things (Interviews conducted with various parents and hearing neighbors of children with hearing impairment, in a session held during the month of April 2019).

From the above, it should be noted that it is paradoxical that some families resorted to shouting, even though they already knew that their child had a hearing impairment. In this order of ideas, it could be said that the family had idealized that with this action they would be able to make their child an equal person, *hearing or speaking*. Attempting to bring the hearing-impaired person from the "other language" to "our language" [or oral language], it already has antecedents in history as since the Middle Ages there was the belief that the hearing-impaired person was an "incomplete" being, and that he/she needed to learn to speak in order to "complete him/herself" (Ladd, 2011, p. 118)[3].

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[3] But the above is only a sample, as the whole of Latin America is witness to an extensive campaign of Castilianization by the Spanish Crown. Similar actions are implemented today with English, French, and Mandarin, which are considered languages of power (Niño, 2013).

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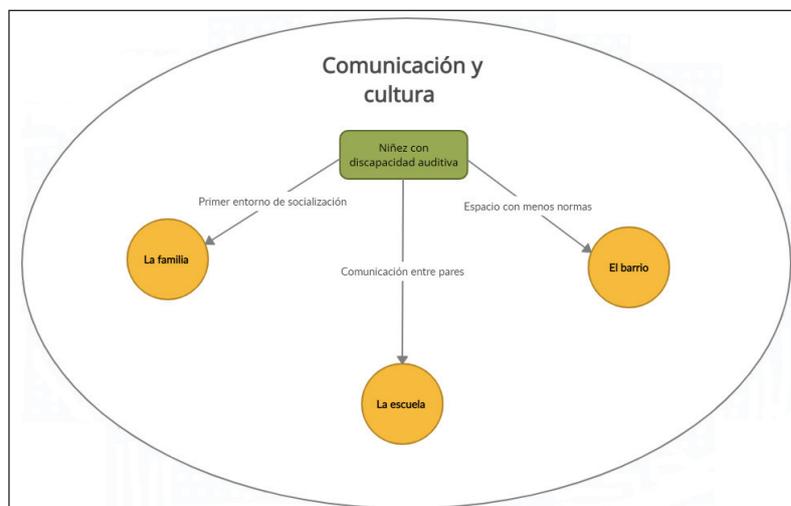
Figure 2. Figure made in Creately
Note: Source: Own elaboration.

It could be said that the idea of teaching lip-reading to children with hearing impairment has prevailed since it is believed that -they should be the ones- who should adapt to the *hearing culture*, all under the precept that "a person born deaf did not have to be inexorably mute" (Ponce de León cited by Trillos, 2016, p. 1). Approaching the matter from a semantic perspective, in terms of the present writing, *hearing culture* is understood as the human group whose form of social interaction is mediated by sound and verbal communication. The previous term is opposed -in this study- to the communication model developed by the *minority culture in condition of hearing impairment* (Pérez de la Fuente, 2014), where communication is determined by a *visuo-gestural* language. From a critical stance, indicating to the disabled the need to learn lip-reading is like saying: "you must learn to understand us," objectifying in the disabled the responsibility of learning the language of the majority culture[4]. In the same vein since the family is the first space for the practice of democracy and for the learning of culture (Martínez, 2008), it is perceived that the disabled person does not have, as such, a place of being within his own family.

> The family is generally the first scenario where social inclusion comes into play since depending on the type of interactions that are built among family members, it may or may not favor the ability to subsequently become involved in other areas of community life (Jaramillo *et al.,* 2014, p. 477).

Assuming the above from a critical perspective, it is observed that the family wants their disabled children to become *hearing or oralizable* subjects, and by luck of shouting. Teaching lip-reading to non-hearing offspring is tantamount to bringing *the different* [in hearing diversity] into

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[4] In this regard, it is also necessary for the hearing person to learn the deaf person's language since the obligation must be mutual and not unidirectional.

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our cultural scheme, which disregards the creation of a place -at the level of language- for a non-hearing person in the family. Added to the above are other disallowing factors, such as:

> When my daughter was born everything was normal, but when we saw that she did not listen and we had to yell at her..., we saw that she was deaf, we felt very sad, it was very hard for the whole family, the father did not want to help her... he did not want to have a deaf daughter, he said that he felt sorry for his family, and he never wanted the family to look at the child... [to this is added the rejection of the family]... he has no one else in the house, he fights with the cousins and I feel that they reject him. (Testimony of a mother. Session conducted during the month of April 2019).

With the above, it is clear that a *different* [in hearing diversity] is not wanted in the family, and with regard to the quote immediately above, they did not want their daughter to be part of the family group. With this, two cultures can be identified, a broad *and majority* one, similar to each other, and with basic communication capacities [*hearing people*], who are the parents of the family, *and another* minority *one*, normally marginalized from the cultural environment [*hearing functional diversity*], but in this case, their own children are part of it.

Migrating from the context, the difficulties to be inserted in the established cultural spaces do not end at home, the problem transcends to the Colombian elementary school, a topic to be developed below.

The school

From the early school years, deaf children are often exposed to all kinds of discrimination by the hearing majority group. In this regard, parents say they are aware of the frequent difficulties in generating spaces of unity or reciprocity, as far as school spaces are concerned. The cultural duality that underlies communication between the hearing and the deaf (Paz and Salamanca, 2009) is also manifested in the school environment, even more so if the school is not - by nature - specialized for deaf children. Regarding the above phenomenon, some teachers presented some school dynamics managed by themselves, with the aim of generating inclusion.

> If we want to relate the children, we have to relate them to others, we have to teach them that they have their own culture but that they are part of one [the culture of the majority] ... we are contaminated by a hearing community... We put ourselves in their shoes, but it is not our space: it's not our space... And when the Sign Language workshops begin, they are the ones who have to get their parents into the story of what [their own parents] are part of their culture (Taken from a discussion workshop conducted with three teachers in the disability field, August 2019).

Nevertheless -and in contradiction with the proposal formulated by the teachers, who have a good level of knowledge of Sign Language- parents do not see themselves as part of the cultural framework (González, 2003) of their own children[5]; in fact, they see themselves as outside of it. Although the efforts made by teachers to generate acts of integration -or *inclusion*- between the

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[5] However, the parents indicated that they did not have time to do so: "We attend the Sign Language classes, but it is very difficult because we work all the time" (In personal communication with a mother, September 2009).

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deaf and hearing are highlighted, it is also understood that *obligation* is not the most assertive way; however, interest in the existence of inclusion is observed.

> If we want to relate to the children we have to relate to others, we have to teach them that they have their own culture, but that they are part of a hearing community, and that they have to learn to relate to each other. Then a teacher told me that the deaf children arrived and were all in a small group, so he started to do an exercise where they were separated and *it was their turn to* interact with their classmate and the hearing one [and in this way...] they were forced to talk with them (Interview with three hearing teachers of deaf children, during a focus group, May 2019).

The deaf population -for *many sectors*- has not been recognized as part of a different culture, which has led to the fact that many times disabled people have to look for institutions or create cooperatives to help each other. In the opinion of practicing teachers, efforts are made from the teaching profession so that the deaf population does not feel excluded from their own school context. Their struggle is constant and at the same time enthusiastic, for which they -through their own testimonies- seem to feel satisfied.

> from teaching many efforts have been made, people kind of acquire Sign Language, at least the basics..., [but] people many times because of ignorance push them aside, they point them out, so we do our bit so that this does not happen (Interview with three hearing teachers of deaf children, in focus group month, May 2019).

To the efforts made by the educational institution [which tries to be inclusive], and in it by the three teachers interviewed, non-hearing children feel fortunate to belong to an institution that understands them. This is reflected in statements by students, such as: "I am here thanks to my mom. I am integrated into a society thanks to my dad and my mom, so that I can achieve this goal and all" (Personal communication with students, August 2019). In the same vein, some parents highlight the work of the school in creating a space for their children:

> thank God at school with their peers with the same disability so that they can communicate with their language... in the child's home they are living in a world, isolated, where they cannot express their real needs, their likes, dislikes and so on... so that they are not discriminated against by society (Interview with a mother, May 2019).

Although it is clear that the teachers intend to generate inclusion through the exercise of authority as teachers, this shows that the relationship between them does not emerge spontaneously, but on the contrary, there is a previous rejection of the difference. In this regard, although historically, there may have been cases of violence against deaf children, the frequent issue is *not bullying* as such but exclusion, and it is precisely this that leads to the need to generate acts of inclusion. Although compulsory education is perhaps not the most assertive way, it is observed that the community of hearing-impaired students is grateful for it[6].

Moving on to another space in the life of the deaf, along with the family and the school, there is another multiplicity of spaces in which the tensions between cultural and linguistic

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[6] However, the criticism should not be dismissed that better inclusion strategies may exist, only that they have not been consulted or implemented by the faculty.

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differences operate -perhaps *with fewer rules*-. Reference is made to the neighborhood environments (García, 2008) where the deaf culture and the hearing culture live without precepts and surveillance.

The Neighborhood

Much of the social and cultural development of children takes place in the so-called neighborhood environments (Barbero, 1993; Barbero, 2003), and similarly, it is estimated that the same can occur in the so-called neighborhoods and residential complexes. Unfortunately, and based on the data emerging from the present study, it could be said that it is precisely in these types of spaces where children are more strongly exposed to all kinds of discrimination and mistreatment. The negative anecdotes are so frequent that the examples given here are only a sample of the social situation of deaf children in their respective neighborhoods. Common spaces (Laval and Dardot, 2015), such as stores, parks, and playgrounds, among others, are perceived -very *surely*-, by some people as spaces free of rules, which makes mistreatment possible, given that in them there is less surveillance or moral authority. In this regard, it is reported:

> the children in my neighborhood hit him a lot, they make fun of him, they call him a fool and I almost don't let him go out to play. I prefer him to be with me in the car when there is no school... [the children often tell him...] That child is sick in his ears and cannot hear words, I do... We hit him hard and show him the ball... He is sick in his ears... they are sick children who cannot listen (Interview with a parent, April 2019).

Neighborhood environments are often so adverse for deaf children that the testimonies can be very crude in this regard. Among the stories is that of a father of a cab driver family, who expresses that he had to isolate his son from a neighborhood context -*evidently aggressive*-, indicating that he did not know what to do with his respective reality; in his crude words, he says that "sometimes I would like to take my life with him because I feel very helpless not knowing what to do with him" (Interview with a father, April 2019). The interviewee states that it was complex for him to continue leaving his son in the house where he lived and in the neighborhood where he lived, given the situations of mistreatment in both places. Based on the idea that most of the problems originate in the area of communication, it should be noted that gestural communication (Vanegas and Marín, 2010) and *non-sound* communication -*in* Spanish- imply many more problems than those perceived at first sight. The difference *between languages* seems to lead to discriminatory and violent acts and, although a mutual cultural enrichment would be expected, unfortunately the opposite occurs. To exemplify the above:

> One day, my son was playing with all the children in the neighborhood, I got very worried and went to look for him... My son was not with them, I kept looking for him and at night, a child from the neighborhood told me that my son had been buried in the sand, with his head outside and covered with boards... I found him and after treating his asthmatic condition, they saved his life... One of the children said that they had buried him because he was dumb... [and when I complained to his parents, they said...] see what you can do with your son because he should not be with our children (Account of a mother in personal communication, April 2019).

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With the above testimony, it can be observed that the position adopted by the minors is in direct correspondence - at *least* - with an absolutist and exclusionist perspective, inculcated by their own parents. However, all the above mentioned, there are more examples in this regard:

> An enraged woman was insulting my deaf son... [she said to him] dumb, stupid, idiot... your son pushed my daughter... when I complained to him, the idiot started monkeying around with his hands, making fun of me.... I apologized to her, told her that my son was deaf and was trying to communicate with her through his hands... [the woman said] a dumb child should not be on the street, he can hurt other children (Mother's account in personal communication, April 2019).

And to all of the above is added one more factor. Reference is made to the fact that, while it is true that there are unscrupulous people [hearing] who try to take advantage of people [also hearing] with whom they do business, these same people identify in the deaf minor a defenseless person, whom they can steal more easily.

> When I sent my child to the store, the man never attended him, we wrote him everything... many times he subtracted money from the money orders and claimed to have given them to him... sometimes he would arrive without the purchase and said that the storekeeper had the money... after several similar complaints, with the help of a neighbor, we discovered the thieving shopkeeper... we accused this man in the administration of the complex, but the administration never did anything... we decided to move out of the place (Report of a mother in personal communication, magnetic encounter in July 2020).

With all the above, it is hoped that the need to place the issue of inclusion of the deaf population in the field of culture or cultural systems (Cadenas, 2014) has been made clear, as long as there are new dynamics that manage to transcend *the idiomatic*, towards a broader understanding and cultural type. Historically, studies on disability have been located in the field of medicine, linking deafness with the concept of disease. In this regard, without dismissing this or that discipline, it is necessary to indicate that studies on disability should be expanded to new disciplinary horizons, not only derived from Biology; reference is made to the various research possibilities in the field of Humanities and Educational Sciences.

Discussion and Conclusions

A probable generalization -which is left as a possible proposal within the present study- is the fact that the contextual problems exposed are replicable in other contexts and with other types of disability. One of the difficulties in the development of this research was the fact that there are limitations to find the actors taken into account in it; it is expected that the testimonies reported in the previous sections are sufficient to support the categories presented in this study. The above, with the ultimate goal of generating an articulation of cultural type on the realities of context where deaf children live and interact. Contrary to the realities exposed by some authors, and going to the level of *discussion*, there are expressions in the field of science, where it is stated that: "the family's main function is to socialize their children according to the dominant culture and contribute to social change: modernity" (Ruiz, 2004, p. 3). These socialization strategies -in many cases- aim to indirectly develop qualities and capacities in the deaf, of benefit to the majority.

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Lip reading is a clear example. The purpose of this study is not to establish forms of cultural relationships between one and the other; on the contrary, it seeks to define the absence of relationships, which leads the disabled to establish forms of culture among their own community of peers, who are also in a condition of functional hearing diversity. That is why the ideal of a "socialization of... ethnic-linguistic minorities" (Cuevas, 2013, p. 710) is understood - in terms of the present study - as a relationship between two cultures (Castillo, Fuzga & Laguna, 2019) and not between two languages, where one of them - the minority one - is inserted within the great cultural spectrum of: *the majority*.

Wanting the child to adapt to the language of the majority -in this case *the family*-, causes its members to yell at their child so that he/she "listens," so that he/she understands in Spanish, resulting in a model of mistreatment of the child. Similarly, and taking a cultural look at the *school environment* (Fuentes, García, Amezcua & Amezcua, 2021), teachers find it necessary to force hearing and non-hearing students to participate in community activities established by the linguistic-cultural majority. Thus, it is observed that communication relationships do not emerge spontaneously but [in this case] by coercion. On the other hand, the *neighborhood environment*, being a space free of rules -or institutional surveillance-, evidenced cruel actions towards the minority in condition of functional diversity. In this way, actions directly related to various forms of mistreatment were found in their own cultural environment. We hope to have sufficiently exemplified the danger of intolerance that is generated in the different neighborhood spaces. Within the research, exclusion was estimated or presented as a cultural phenomenon, rooted in three spaces *-exposed as a sample-,* of the great context of society. With this, it is also necessary to indicate that these spaces are in essence determinant for the development of every citizen in the western world. For all of the above, it is a pity that the three environments coincide precisely in the *exclusion* factor and not in any other way of proceeding towards their neighbors or peers.

On the other hand, considering the impossibility of making generalizations -given the limits offered by a qualitative approach study- it is proposed to advance in the research from the study of new contexts of western society, in such a way that the perspectives addressed in this research can be *verified* or *contradicted.* The sum of studies such as this one will later allow the detection of needs of the hearing-impaired population and also the planning of alternatives for the improvement of their social problems. This could be one of the goals for the present century, and it is *the academy* that should take the first step in this direction.

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FLAMENCO AND SOCIO-EDUCATIONAL INTERVENTION

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Abstract. This article is part of the result of a doctoral research, whose final objective is to verify the applicability and effectiveness of flamenco as a tool for socio-educational intervention. The text shows a part of the research carried out from the Field Work, methodology of the Anthropological discipline. Throughout the text, the main ideas of the elaborated theoretical framework are described, as well as the results of the interviews and the observation of the different experiences studied. Experiences that have been analyzed in depth, with an investigation of more than five years, in different places in Andalusia: educational centers, cultural center, community partners, private, associations, NGOs, etc. Although each experience is different, they all have in common the use of flamenco as a transversal element, to articulate a work that aims to improve the reality of the people who receive the proposal. The results obtained shed light on the multiple possibilities of flamenco as a tool applied to socio-educational intervention. And it is concluded that, in a specific way, flamenco contributes to the interventions studied, concrete elements that favor success in the work carried out.

Keywords: Flamenco, intervention, education, social, change

El FLAMENCO Y LA INTERVENCIÓN SOCIOEDUCATIVA

Resumen. El presente art culo es parte del resultado de una investigaci n doctoral, cuyo objetivo final es comprobar la aplicabilidad y efectividad del flamenco como herramienta de intervenci n socioeducativa. En el texto se muestra una parte de la investigaci n realizada a partir del m todo Etnogr fico propio de la Antropolog a. A lo largo del texto, se describen las principales ideas del marco te rico elaborado, as como los resultados de las entrevistas y la observaci n a las diferentes experiencias estudiadas. Experiencias que han sido analizadas en profundidad, con una investigaci n de m s de cinco a os, en diferentes lugares de Andaluc a: centros educativos, centros culturales, socio comunitarios, privados, asociaciones, ONGS, etc. Aunque cada experiencia es diferente, todas tienen en com n la utilizaci n del flamenco como elemento transversal, para articular un trabajo que pretende mejorar la realidad de las personas que reciben la propuesta. Los resultados obtenidos, arrojan luz sobre las m ltiples posibilidades del flamenco como herramienta aplicada a la intervenci n socioeducativa. Y se concluye que, de manera espec fica, el flamenco aporta a las intervenciones estudiadas, elementos concretos que favorecen el xito en el trabajo realizado.

Palabras clave: Flamenco, intervenci n, educaci n, social, cambio

Introduction

Before beginning to expose the results of a research whose object of study is flamenco as a tool for socio-educational intervention, it is necessary to clarify what we understand by flamenco, as well as the current bases of social and educational intervention. It is also necessary to clarify the current bases of social and educational intervention.

First of all, in order to understand flamenco in its entirety, it is necessary to take a brief look at its history and the theoretical framework elaborated by the research that has studied this phenomenon. Since its origin, at the end of the 18th century, flamenco has gone through several stages: the pre-flamenco stage, the caf cantante, the flamenco opera, the neo-jondismo, and the current flamenco. Likewise, there are two currents of thought that understand flamenco as an artistic phenomenon, according to authors such as Steingress, Lavaur, or Wasahbaugh, or as a cultural phenomenon, according to the studies of Cruces or Moreno.

The *pre-flamenco stage* is the previous moment in which the foundations are laid and the first news about this musical phenomenon are known. It encompasses a set of aesthetic, social, and cultural elements that occurred in Spanish society between the 18th and 19th centuries. "(...) the poor Andalusians embraced a resilient conservatism that ironically resembled the oppressive and coercive conservatism of the previous century (...); they reshaped themselves as majos, that is to say as dashing and brazen beings sure of themselves." (Washabaugh, 2005: 73).

According to Lavaur (1976) and Steingresss (2006), flamenco is a modern artistic genre of the 19th century. Born in romanticism to provide a cultural identity to the national political project, it represents the romantic values that are appreciated by modern intellectuals while embracing tradition, creating this modern-traditional phenomenon and giving rise to its main irony (Washabaugh, 2005). In short, romanticism drives flamenco as an artistic, urban, and modern phenomenon. It is not a popular art but popularized (Lavaur, 1976) and populist (Aix, 2014).

Between 1850 and 1925 flamenco was professionalized in the *Cafés Cantantes*. They represent one of the milestones of flamenco through which the voices of everyday Andalusian life were adapted, the songs were refined and the lyrics sweetened (Washabaugh, 2005). Finally, the cante del caf took more strength than the cante de la calle, which was "overshadowed by the professional sound" (Washabaugh, 2005:76). From 1880 onwards, they carried out an anti-flamenco campaign from a modernizing perspective, rejecting the old and associating flamenco with delinquency, nocturnality, and backwardness. In addition, certain intellectuals and aficionados rejected the intense professionalization of flamenco at the beginning of the 20th century.

Between the years 1925 and 1955, another historical stage called *Flamenco Opera* took place. In this period there were two types of flamenco performances, those aimed at amateurs that took place in the colmaos, and were paid by se oritos[1] as a private party. And those shows for the general public in which flamenco forms are mixed with national music, such as the copla. As a reaction to the decadence of flamenco opera, Manuel de Falla and Federico Garc a Lorca organized the I Concurso Nacional de Cante Jondo in 1922, in Granada, which they intended to rescue the authentic traditions that opera was destroying; however, the impact was rather the opposite, as it is described today as the "true moment of take-off of flamenco opera (Cobo 1994:77)." (Washabaugh 2005: 79).

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[1] Men with high purchasing power.

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At this point it is necessary to mention that the research carried out on the flamenco phenomenon has been catalogued in two different senses. On the one hand, authors such as Steingress, Lavaur, or Washabaugh, identify it as an artistic phenomenon. However, from the point of view of Cruces or Moreno, flamenco is studied as a cultural phenomenon.

From the perspective of flamenco as an artistic phenomenon, several authors ask to what extent flamenco has been used by the state as an "ethnic supplier"[2] to achieve its own goals. Lavaur (1976) states that flamenco is an artistic phenomenon created in response to traditional and gypsy themes demanded by Romanticism. During the 19th century flamenco helped the consolidation of the national project of the state (Steingress, 1996) by providing a popular culture that allowed social union (Florido and Reigada, 2015). The so-called "national-flamenquismo" during the Franco regime, maintained the previous Spanish nationalism while selling a symbolic image of Spain of great acceptance by the incipient tourism, "and it is that the commodification has been another possibility of instrumentalization, present in flamenco since its own origin as an artistic genre" (Florido and Reigada, 2015, p. 224).

A new stage called *Neojondismo*, which meant for flamenco to reach a "statute of artistic autonomy" (Aix, 2014, p. 45), takes place between 1955 and 1980 as a purist reaction. In it there is a movement in defense of flamenco jondo, its elements and musical foundations as a reaction to the vulgarization of flamenco in previous productions and political uses linked to Francoism. Three events are key in this stage, on the one hand, the publication of the books "Flamencolog a" by Anselmo Gonz lez Climent (1955) and "Mundo y formas del cante flamenco" (1963) by Ricardo Molina and Antonio Mairena. Another important event is the "Concurso Nacional de Cante Jondo de C rdoba" (1956). And finally, the "Antolog a del Cante" published by Hixpavox (1954). Until the sixties, the shows took place mainly in the Tablaos or in the National Singing Competitions organized since 1958 by the Flamencology Chair of Jerez.

From 1980 until today begins a stage called *New Flamenco*. There is a process of commercialization that gives more importance to record production and causes a worldwide projection. Institutional, political, and financial support increases, awakening interest in cultural, audiovisual, or academic spaces. It is significant the popularization of flamenco through great figures that become symbols and social phenomena such as Camar n or Paco de Luc a.

Apart from the previous description that understands flamenco as an artistic phenomenon, other authors have made an ethnic reading, understanding flamenco as a cultural phenomenon linked to social and cultural practices: parties, communication, relationships, etc., as well as to the ethnic groups present in Andalusia during the sixteenth and seventeenth centuries such as moors, gypsies, and popular classes. This point of view is compatible with the theory of Romanticism and allows explaining the musical singularity of flamenco by linking it to oriental forms, as well as bringing forward the origins to a pre-modern period and giving space to other pre-existing forms of music and sociability linked to rites of passage, meetings, and festivals. In short, it explains the historical process of creation of a musical-social system by cultural traditions proper to specific social and ethnic groups (moors-gypsies-popular groups).

From the perspective of flamenco as a cultural phenomenon, we define the cultural traits that allow us to identify flamenco as a system and cultural heritage. In relation to

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[2] http://www.revistaandaluzadeantropologia.org/uploads/raa/n9/aix.pdf

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the cultural system, we differentiate two views, an ethnic one that links flamenco to Andalusia and refers to features such as sociability, work, or festivals, and a universalist one that understands flamenco as a cultural expression. Cruces (2002) justifies the rootedness of flamenco in Andalusia because this land shares features of sociability with flamenco.[3]

> (...) although it is true that flamenco reflects many of the features of group social relations characteristic of Andalusian culture (the tendency towards social segmentation, the dominance of the male component in contexts understood as public), certain forms of interrelation are unique to collectives, spaces and social times that have come to be called specifically flamenco. (2002, p. 23).

The author maintains that from the study of sociability we can know "why flamenco emerges and develops in Andalusia and not in other societies due to the peculiar forms of relationship through which Andalusian sociability is understood and manifested" (2002, p. 23). In relation to this hypothesis, Cruces proposes a methodological analysis of flamenco rituals from the analysis of three variables: (i) level of institutionalization and formalization, (ii) participation and links, and (iii) the distinction between the use value and exchange value of flamenco expression, (private or public flamenco) depending on whether or not there is a monetary exchange that responds to the logic of the market or, on the contrary, responds to a social need such as the accompaniment to a wedding or agricultural work. The private spaces are more conducive to the "complete and socialized experience of flamenco" (2002, p. 33). However, what is significant is that direct relationships do not only occur in private flamenco but also "with a dose of symbolic artifice in many cases in pe as or festivals (...) and that constitute a sample of the formalized social moments in which flamenco has exchange value." (2002, p. 34). Cruces maintains that flamenco creates and serves egalitarian relations, at least symbolically, since in reality they tend to segmentation, just as in Andalusian society in which there is "the existence of a multiplicity of small groups, most of them not formalized, which are not very permeable to the outside and within which there is a generalized sociability" (Moreno 1986, p. 273). In this sense, it is necessary to consider the level of access to the flamenco rite since, although the spectacle is accessible, "the world of the flamencos is hardly permeable" (Cruces, 2002, p. 273). (Cruces, 2002, p. 35). To access this world, affinity is necessary, that is to say, having the quality of being flamenco, which ensures that the flamenco codes are known and respected for listening and enjoyment. Other segmentation criteria are ethnicity in terms of the category of gypsy or payo and the gender.

> It is no secret that patriarchal control has kept a multitude of gypsy women from the possibility of becoming professionals. (...) While the participation of gypsy women in their private flamenco rituals is in its own right, the invisible condition of women in flamenco is almost exclusive to the non-gypsy population. (2002, p. 42).

In short, due to a cultural construction of gender, women do not participate in the same way as men, neither in pe as, nor in the artistic field, although in dance the female presence has been a constant, it has been marked by categories associated with sensuality

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[3] We understand sociability as a system of institutionalized social relations: guidelines, contexts, values, types of expression, groupings, ritualization, etc.

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and gracefulness. In contrast, women in the home have been the first transmitters of flamenco, which has been displaced by matrilineality.

Another issue to highlight is the reaffirmation of local identity in flamenco: the strong weight of the local community is one of the dimensions for the construction of identity boundaries in Andalusia. This component is very marked in flamenco and conditions its models of ritual action. The most interesting are the communicative processes that occur between artist and audience because "there the link of local identification and the communitarian and integrating dimension" (2002, p. 48) of certain flamenco events such as festivals is externalized. "Flamenco allows the establishment of a communication process through its aesthetic weapons and its emotional plasticity (...) also of the festival, of the community identification in which the rootedness of the local is indisputable." (2002, p. 53).

Therefore, from the perspective of flamenco as a cultural phenomenon, flamenco rituals "go beyond the purely cognitive or emotional. They serve as a framework for the expression of collective sociability (...) they allow the establishment of networks and relationships of power and prestige and are social contexts in which identity ties are clearly evident." (2002, p. 54).

In relation to cultural heritage, authors such as Isidoro Moreno make a critical review of the policy carried out in this area in a sense of instrumentalization of flamenco in favor of politics or the market. Flamenco is a marker of Andalusian culture, although his analysis raises false binarisms that hinder this relationship, such as gypsyism versus antigypsyism: gypsy Andalusians and non-gypsy Andalusians. Doubt about the popular or non-popular character, as opposed to what we understand as a modern traditional flamenco, composed of elitist and popular elements. The notion of the hermeticism of flamenco, which had been made invisible until its commercialization. And, finally, a false individualistic identification of flamenco, which in its essence is a collective action, communicative, ritual, intimate, and individual (but not individualistic) experience.

An issue that has limited flamenco has been its identification with the country and Spanish, in that already mentioned ethnic contribution that allowed the political system to articulate the national feeling, mentioned by authors such as Steingress or Aix, from the point of view of flamenco as an artistic phenomenon. This invented national culture, which does not take into account the different multicultural realities of the Spanish state, contributes to the unity of the nation while blocking the specifically Andalusian identity of flamenco. From the reflection of the political instrumentalization of flamenco, Moreno affirms that flamenco is a local and global culture since it is configured as an important Andalusian cultural marker that recognizes the mestizo and intercultural roots. It is a phenomenon that allows the expression of the feelings and experiences of both gypsy and non-gypsy classes due to its living social functionality (cultural rooting) for the expression of values and not so much to the commercialization. It has had a universal projection and reception.

Flamenco is intangible cultural heritage because it has cultural and ethnological roots; it shows cultural diversity and represents an identity; it is traditional as well as alive, and it is the manifestation of a social collective, its transmission is oral, and it has psychosocial meanings and functions; "it is an emotional heritage, being the human body

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(the dancers, singers, musicians) the main instrument for its execution or - literally - embodiment." (Gr tsch, 2011)[4]
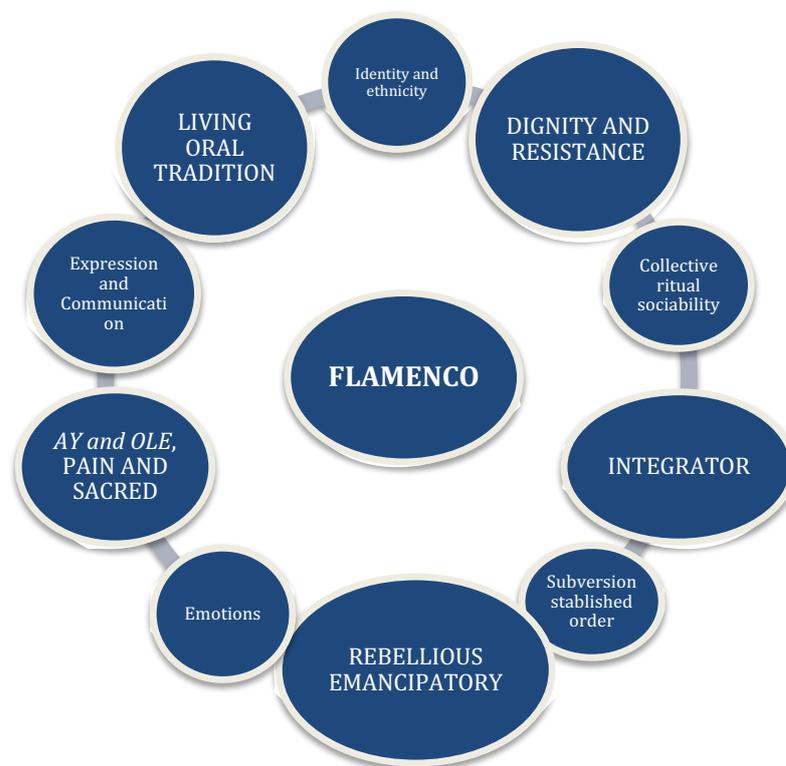
Figure 1. Elements of Flamenco.
Note: Source: Own elaboration based on field work.

Once the two currents of thought have been outlined, it is possible to describe the results of the study that places flamenco in an intermediate place between art and culture. To do so, we start from a complete and non-exclusive view, which discovers artistic and cultural elements in flamenco. Throughout five years of specific doctoral study on this phenomenon and starting from the theoretical framework already described, Figure 1 is shown as a representation of the elements of flamenco, described in an artistic and cultural sense.

The main purpose of this research is to show how flamenco can be a successful tool for social and educational intervention. Before continuing, we will stop to analyze what both actions consist of.

Social intervention is that "activity that is carried out in a formal manner attempts to respond to social needs and influence the interaction of people, aspiring to their social legitimacy" (Fantova 2008, p. 149). The need to which it responds is interaction, that is, the relationship between personal autonomy and community integration, (Fantova 2008). It is a basic activity in the development of disciplines such as Social Work or Social Education (Fantova 2008). Psychology also works through intervention, although it uses the term psychosocial intervention, which we can define, following Nelson and Prillenltensky, as "Processes intentionally designed to influence the welfare of the population through changes in values, policies, programs, resource distribution, power

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[4] Conference I International Congress of Flamenco, 2011. *Genesis of a heritage. The case of flamenco.* *http://www.juntadeandalucia.es/cultura/redportales/comunidadprofesional/sites/default/files/kurt_grotsch._genesis_de_un_patrimonio_el_caso_del_flamenco.pdf* *Viewed 06/13/2017*

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differentials, and cultural norms" (Carnacea and Lozano, 2011). In short, social intervention aims to bring about change in order to achieve equilibrium, so that society must be understood as a social system (Parsons, 1951; Merton, 1957), made up of elements and institutions that maintain it. It does not seek the transformation of the system but the transformation of some dysfunctional elements (people, groups, institutions...), which must be studied and treated so that they become functional. (Montenegro, 2001).

Social intervention takes place under the protection of methodologies developed by different disciplines, which offer the framework and techniques to carry out direct action with people. The methodology is not only the organization of some steps or instruments, but has a totalizing and integrating vision that seeks to influence the structure of the facts object of intervention. Therefore, until reaching practice, the methodological process is ascending, involves an accumulation of knowledge, and uses different techniques to operate. (Kisnerman, 1998).

Another of the dimensions in which Flamenco allows us to intervene successfully is education, and to describe it, we start from a very specific viewpoint promoted by Paulo Freire, who understands it as "(...) praxis, reflection, and action of man on the world to transform it" (Freire, 1971, p. 1) All educational action starts from a concept of the human being and the world, which is why there is no neutral education, nor can it be outside of society. Rather, it must be in contact with the environment and gather people's expectations, feelings, experiences, and problems.

For Freire, education is a song of love, of courage towards reality, which does not fear but rather seeks to transform, with a committed and fraternal spirit. For this reason, education is dialogue, communication among men and women, and it does not take place in a vacuum but in concrete social scenarios. It is the most powerful tool for social transformation; it is a weapon in the struggle against backwardness and poverty; it is a constant experience of mutual experiences between the educator and the student, which give rise to conscientization education.

Understanding education in this way is also possible to understand how flamenco is a tool that facilitates the liberation and transformation of which Freire speaks since there are several flamenco elements, related to the definition given, such as sociability, the social act in which flamenco is possible, the role of expression and communication, and the very identity of rebellion and denunciation that is in its deepest root. In this way, flamenco not only as a cultural element, but also as an artistic element, can favor educational and social work.

In order to understand the relationship between flamenco and education, it is also important to analyze the dimension of art in relation to socio-educational intervention. If we analyze the direct practice of intervention from Social Work, Social Education, or Psychology, we detect that art-related techniques are often used as mediating elements for education or against exclusion. These are cultural and artistic techniques that professionals use in social and community contexts without knowledge or specific planning, relying solely on their own creativity. (Moreno, 2010) The intention is to use art as a mediator, as a tool that allows the professional to promote autonomy and social inclusion of people. (Moreno, 2010). "No one can get out of a situation of social exclusion if they have not been able to imagine themselves differently, to represent themselves, to project themselves into the future." (Moreno, 2010, p. 2) So art can be a vehicle for a different representation of the person, as a projection towards which his own change is directed.

From disciplines such as philosophy, psychology, or education, different authors think about the relationship between art and social intervention. The philosopher Nelson Goodman (1906-1998) maintains that art allows us to understand and change our

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representation of society, giving rise to a relationship between what we feel and what we experience. From psychology, authors such as Sigmund Freud (1856-1939), Carl G. Jung (1875-1961), Jean Piaget (1896-1980), Mar a Cristina Rojas, or Susana Sternbach, have worked on the relationship between human development and art, some highlighting intellectual development, others emotional development according to their schools of thought. For the Gestalt psychologist Arnheim, art helps to situate oneself in the world and affirms that it is one of the most powerful instruments for the realization of life. (Moreno, 2010).

In the educational field, De las Heras (2013) maintains that Art Education allows a comprehensive and emotional development through the inclusion of art in educational processes. It is a pedagogical tool of great importance since, through it, students develop their cognitive and perceptive resources, critical appraisal, and expression. For this, art education must be critical and go beyond the student's technical skills; it must be a reflection based on the collective creation of the students.

With regard to education, it is also necessary to address the issue of Educational Innovation as an ally in a scenario that is becoming more complex with each passing year due to the evolution of society itself, which education must keep pace without delay.

Carbonell (2001) defines innovation as a series of interventions, decisions, and processes, with a certain degree of intentionality and systematization, that seek to modify attitudes, ideas, cultures, contents, models, and pedagogical practices.

Margalef and Garc a, in their article What do we mean by educational innovation, they consider that innovation implies bringing about change and "change always implies an alteration, a transformation of an object, a reality, a practice, or a situation." In the field of education, innovation is both a cause and an end and entails many difficulties. As Perrenoud (2004, p. 184) points out "...despite new technologies, the modernization of curricula and the renewal of pedagogical ideas, the work of teachers evolves slowly because it is less dependent on technical progress, because the educational relationship obeys a fairly stable pattern, and the professional culture accommodates teachers to their routines..."

But despite the slow pace at which educational changes are imposed, innovation in education is a permanent, original, and intentional process of seeking to improve the quality of education and student learning; its relationship with the use of technologies is subordinated to this improvement and includes structural aspects that concern the organization of centers, the dynamics of information and communication and, above all, the teaching-learning processes.[5]

Most relevant, "it is innovation if it adds value to learning." (Francesc Pedr , director of UNESCO s International Institute for Higher Education in Latin America and the Caribbean (IESALC).

Following the keys given by the Junta de Andaluc a, innovation is a field open to multiple possibilities, which a priori focus on new technologies, but they must also address the human and experiential part of the person in an environment that is not always the most pleasant, such as the one we have experienced this year due to the health crisis. Forced the entire educational community to alter their customs, ways of relating, and operating in the centers, it has been necessary to innovate to improve the traditional ways in order to prevent disease and maintain the levels of relationship and social bond necessary for the teaching-learning process.

This situation serves as an example for the following reflection. If innovation is understood as something beyond ICT equipment in the centers, it will be possible to create

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[5] Retrieved from: https://www.juntadeandalucia.es/educacion/portals/web/ced/innovacion-educativa (05/20/21)

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new realities in the educational space that make the teaching-learning process richer. All this by taking care of the link and affectivity, respecting the right to education, taking into account the multiple agents involved, and being open to the social environment.

In short, innovation brings about a change in the educational reality, which improves the keys to teaching and brings about the necessary updating to match the work in the centers with real life. One of the keys to success is to take into account the context, to adapt the work to the people, avoid obstacles, and enhance the strengths of the community. The school must be configured as an open space that allows the entry and participation of families and the community in the educational process. Hargreaves (2003) states that change in education is related to the attention to the rational and emotional aspects of this change, as well as to its expansion to the rest of the community. According to the author, it is necessary to combine commitments and work jointly between the community and institutions. (Sanchiz, 2009).

Based on the above information, it is possible to propose the approach of flamenco to the educational environment as an innovative experience, which communicates with the cultural environment that we inhabit, promoting expression and communication, sociability, dialogue and, ultimately, transformation.

Method

The doctoral research that frames the results described in this article is approached from the Ethnographic Method, preceded by a bibliographic and documentary review of primary and secondary sources that allow to start the field work from a perspective closer to the object of study.

Documentary review

A documentary review of primary and secondary sources on the Object of Study is carried out, or that can shed light on the hypothesis raised and that allow the approach to the field with a previous information necessary to understand and analyze the real situations through the exploration of the main authors. In relation to the study of flamenco as an artistic and cultural phenomenon, we will analyze the main works of Lavaur, Steingress, Whasabaug, Aix, Cruces, Mandly, and Moreno. Within the framework of social intervention through art, the production of Grötsch and de las Heras is reviewed, as well as reference authors in Psychology, Social Work, or Education: Jung, Piaget, Klein, Ander-Egg, and Freire, among others.

Ethnographic method

Ethnography is the method developed by the anthropological discipline. It is materialized in Fieldwork and offers several tools to access information of which Observation, In-depth Interviews with Key Informants, and Discussion Groups have been used, as shown in the following table.

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Table 1
Ethnographic research design

Experiences studied			
EXPERIENCE	FIELDWORK Place, year	PARTICIPANTS	INTERVIEW // DISCUSSION GROUP
Social and educational intervention			
Ponte Flamenca	ONGD Women in Conflict Zones, Red Cross, CICBat Cordoba, Huelva, Granada, Malaga, Ecuador. (2013-2017) IES Levante, Algeciras (C diz), 2015 IES Galileo Galilei High School (C rdoba), 2016 IES Averroes (C rdoba), 2017. CEP C rdoba, 2017 IES Cornelio Balbo, C diz, 2020	Groups at risk of exclusion: women, victims of violence, young people, community groups. VET students VET students ESO students Faculty Faculty	Facilitator: Araceli Caballero Participant 1: Inmaculada Cantos Participant 2: Azahara Medina Participant 3: Isabel Pozo Focus group: Faculty
Ole with Ole	ONGD CicBat Seville, Cordoba, Cadiz, Guatemala (2021-2014)	Youth Social intervention professionals Feminist groups	Facilitator 1: Maribel Villata
Flamenco Self-Esteem	Seville City Council, civic centers, community intervention program (2017-2020)	Socially excluded groups. Older women	Facilitator: Carlos Sep lveda
Inclusive Flamenco	Seville (2018-2020) Documentary follow-up and publications	People with functional diversity (blindness, down syndrome...)	Facilitator: Jos Gal n Participant 1. Pepa Polidoro Participant 2 Lola Garc a-Baquero
Alalá Foundation	Alal Foundation Seville and Jerez, (2019-2021) Documentary follow-up and publications	Gypsy children and family members in a situation of social exclusion	Professional 1. Emilio *CaraCafé* Professional 2. Mar a Ortega
Flamenkura cures everything	Cadiz, Malaga, Bilbao, Mexico (2017-2020) Documentary follow-up and publications	Faculty Members of social groups Community in general	Professional 1. Monica Flamencura Professional 2. Raquel Flamencura
Emociones a Compás	Seville, Cordoba and Granada (2016-2018) Documentary follow-up and publications	Social intervention and performing arts professionals	Professional: Noemi Mart nez
Educational innovation			

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Educational Innovation Project	Living and Feeling the Heritage Program Educational innovation project through Flamenco #Levanter as, IES Levante, Algeciras. (2020/2021)	Educational Community	Participant 1: Aurelio Herrera Participant 2: Francisco Guzm n
Flamenco in the Classroom Awards	IES Garc a Lorca, Algeciras (2018/19) IES Jacaranca, Brenes (2019/20) IES Las Lagunas, Mijas (2019/20) Documentary Follow-up	Educational Community	Awarded: Manuel Salazar

Public disclosure and whistleblowing

Flow 6x8 Collective	Seville (2015-2020) Documentary follow-up and published proceedings	Community in general Social movement activists	Participant 1: Paco Para so (pseudonym)
Revolting comb	Social Networking (2019-2020) Follow-up publications	Community at large Activists of feminist and gypsy movements	Facilitator 1: Peineta Revuelta (pseudonym)
The power	Media (2018-2021) Follow-up publications	Community in general Feminist movement activists	Journalist 1: Auxi Le n

professionals

"La Chocolata" Dance Academy	Seville (2020-2021) Classroom participant observation	Mixed groups of medium-high socio-cultural and academic level	Dancer: Carmen "La Chocolata" Focus group: Class attendees
"Jesus Nuñez" Dance Academy	Cadiz (2020) Classroom participant observation	Mixed groups of medium-high socio-cultural and academic level.	Dancer: Jes s N ez
"Maica" Dance Academy	C rdoba (2015-2017) Classroom participant observation	Mixed groups of medium-high socio-cultural and academic level.	Dancer: Paco Montemayor
"Rosa de la María" Singing Academy	C rdoba (2013/2015) Classroom participant observation	Mixed groups of medium-high socio-cultural and academic level.	Singer: Rosa de la Mar a Discussion Group: Class attendees
Documentary experience "No noise." "Inma Lobato" Academy	Documentary Presentation C rdoba (2016) and Seville (2017) Balkans Documentary Follow-up	Community in general Women from 40 to 80 years old attending class	Documentary Director: Jes s Pulp n Dancer: Inma Lobato
Antonio Manuel Rodriguez	Professor, University of Cordoba. Researcher Memoria Andalus		In-depth interview (2020)

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Bárbara de las Heras	Professor at the University of Ja n. Flamenco and body researcher	In-depth interview (2018)
Rocío Marquez	Cantaora	In-depth interview (2020)
Raúl Rodríguez	Anthropologist, researcher, musician,	In-depth interview (2020)
Juan Pinilla	Musician, Social Activist	In-depth interview (2020)
Alicia Carrasco and José Manuel León	Flamenco singer and guitarist	In-depth interview (2021)

Note: Source: Own elaboration

The table above shows the categories of observation analyzed: *Social and educational intervention, Experiences of educational innovation, Dissemination and denunciation, and Professionals*. Based on these categories, participant observation of the different experiences is carried out, key agents are identified in the field, and this allows the development of in-depth interviews and discussion groups. The extensive Fieldwork developed in different cities of Andalusia between 2012 and 2021, has been systematized in written and audiovisual form. Initially, the data collected in each observation category is transcribed and in a differentiated manner according to the research technique applied. Once all the information organized by categories is available, the data are systematized in units of analysis, which allow crossing, comparing and checking the information obtained in the field during a period of 9 years through the different research techniques of the ethnographic method, obtaining the results described in the following section.

Results

The ethnographic research carried out allows us to obtain a road map on the use of flamenco in socio-educational interventions. The units of analysis established in the analysis of the data obtained allow us to present in an orderly manner the main findings of the research, which are differentiated according to the categories analyzed. The following is a brief description of the main findings based on the observation units established:

The *experiences of social and educational intervention* studied are heterogeneous and are mainly studied in Andalusia between 2012 and 2021. They are managed by professionals in social intervention, with training in psychology, education, social work, or pedagogy, who also show admiration and respect for flamenco and have been trained in a non-professional manner in different areas of this discipline, mainly singing or dancing.

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All the experiences are carried out from the logic of social intervention: a need is identified and an intervention is planned, which in these cases is developed using flamenco as a tool and vehicle through which to carry out the work in order to achieve the proposed objectives. In 90% of the cases studied, the level of satisfaction is high or very high, as stated by the participants in the discussion groups, as well as the results of the evaluations carried out in each case. From the data obtained in the fieldwork, it can be deduced that the use of flamenco in these cases accompanies the key tools of the social disciplines to respond to the needs identified.

In no case is the objective to learn to dance or sing flamenco; however, its application as an added resource favors certain keys to achieve success. Each professional develops a very particular way of applying flamenco, which responds to the group, the need, and the person's own resources. Nevertheless, we can establish common elements to all the experiences:

- They occur in *group* work processes
- Encourage *communication* and relationships among participants
- Flamenco expression promotes *equality* among participants
- The application of the flamenco codes is *feasible* both in groups that use it as a cultural tradition, such as the gypsy ethnic group, or those who are totally alien to it, such as migrants from other countries or from other areas of Spain
- Flamenco as an artistic expression can be approached as a *diverse resource*, based on percussion (rhythm), guitar (listening), singing (voice), and dancing (body)

Special mention should be made of the *educational innovation experiences* developed in Andalusian public schools, under the influence of the educational innovation program, Vivir y Sentir el Patrimonio, promoted by the Junta de Andaluc a. Several of these experiences have been studied, which brings flamenco closer to the classroom, as a tool for educational innovation, so that flamenco becomes a support for the teaching-learning process.

The following key elements were identified as elements of success in the experiences studied:

- The teachers who promote the experience are flamenco *enthusiasts*, have a minimal background, or should be trained to be able to develop the intervention.
- The *contextualization of the* proposal according to the center marks different strategies, based on local figures, or variants of certain sticks endemic to the area.
- *Participation* with local flamenco artists allows for a more positive experience.
- Material, spatial, and human *resources* must be adequate for a proposal of educational innovation with quality.
- Design an *educational strategy* that favors the application of flamenco both transversally and in the different areas.
- Favor the *experience of flamenco* from the calm and creativity.

Another of the units of analysis of the research studies three interventions in the field of educational dissemination and public denunciation, as is the case of the Flow6x8 collective, with its flamenco protest, bursts into public spaces and to the rhythm of zapateado, or sole singing can make visible certain situations that they consider unfair, such as those that may arise from banking or political exercise.

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The following groups analyzed are Peineta Revuelta and La Poder o, more oriented towards the dissemination of information in journalistic terms through articles (La Poder o) or social networks (Peineta Revuelta). Both raise their voices by appropriating the flamenco cultural code, which gives rise to a flamenco language, easy to understand and disseminate, which gives visibility to the mother population of this art, to the population located on the margins, in the exclusion zone.

In this block of experiences, the cultural analysis of flamenco takes on special importance, which is the guiding thread of each intervention beyond the artistic forms or the use of flamenco musical products; in the fieldwork a common identity is identified in the three proposals, with different objectives (dissemination, expression, or denunciation), that makes it possible once again to determine the main keys, such as:

- Use of flamenco as a *tool for expression* and communication of excluded populations, as a cry of demand and rebellion.
- *Non-normative* interventions, both journalistic (freestyle publications) and artistic (flamenco performances by Flo6x8).
- Rescue of the *free and rebellious spirit* of an art that develops from the most heterodox and risky creation, in an unfavorable context in its origins.
- Dissemination of *flamenco* culture and *aesthetics* in its designs, forms, rhythms, and language.

Finally, the research work on flamenco *professionals*, through in-depth interviews and participant observation in their classes or shows, demonstrates how alive Flamenco is since a high percentage of current artists make it possible for it to evolve and question its own margins with each stage proposal.

The artists have been selected on the basis of their production and contribution to flamenco in the last 10 years, also taking into account those who carry out pedagogical work to disseminate or promote this art. In this sense, practices have been identified that, based on a deep conviction to change and improve society, evolve to give flamenco, in its purest artistic sense, a concrete orientation to an end, such as the flamenco dance classes that Inmaculada Lobato teaches both in her academy to elderly women, and in the Balkans to women wounded in war have a therapeutic effect for the benefits of dance and flamenco. In the same way, artists like Ra l Rodr guez or Roc o M rquez study and work on how to give visibility to the black origin of flamenco in the case of Ra l, or to more current and unfair issues such as the exploitation of miners when Roc o went down to the well to show solidarity with the miners on strike in Leon, in 2012. But in addition to the dance or singing, flamenco also sneaks into the corners of the university and researchers such as Barbara de las Heras, with her thesis on the importance of the body as a vehicle for emotions, or Antonio Manuel, who develops a theory based on orality to understand the origin and development of flamenco today.

All this contributes to broaden the boundaries of this art and this cultural form, which, as already mentioned through the different categories of analysis studied, provides us with keys that favor its application and success in different contexts.

Discussion and conclusions

In a generalized way, we can conclude the following keys of flamenco as an artistic and cultural element in its application to the social and educational reality.

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- It favors the application of art to social intervention, starting from the bases established by Art Therapy. Learning the techniques of singing, dancing, or guitar, favors the process of personal change through discipline, evolution, social relationship, and emotional work that allows any artistic expression.

- The channel of expression and communication used by flamenco allows the transmission of a message from the person who performs to the audience that receives it, using specific codes associated with Andalusian culture (singing in Andalusian, tone of voice, listening and silence, dialogue between the parties...).

- Traditionally it has been an art developed and associated with collectivities located on the margins: gypsies, Africans, Jews... so that, in its roots and memory, exclusion and marginality are palpable, connecting like a magnet with the peoples who suffer. For this reason, the work with groups in situations of exclusion finds a common denominator in flamenco expression.

- From the situation of exclusion experienced by people who begin to develop flamenco, the need to resist and show dignity in the face of the outrages suffered is also born. Flamenco is in itself orthodox and heterodox, it is critical of its reality, its lyrics are sharp, and the people who sing them show a firm intention of social change.

- Flamenco is in community, in a group, with the intervention of various participants, flamenco is made possible. In the same way, the experiences of intervention studied are only possible in society, working as a group.

- Linked to flamenco sociability and from a cultural perspective, flamenco is a sociability ritual, which also allows to organize life since it has specific lyrics and palos for different moments associated with celebrations, or the accompaniment in mourning, as well as in everyday agricultural, mining or fishing work. Undoubtedly, it is a vehicle for emotional transmission, which offers very specific material for social intervention, based on the need to be worked on: associated with emotions, the development of life, acceptance, and development of the person.

All the elements described above are present in the experiences analyzed. They have a clear function of supporting the intervention, and make it possible to give quality and success to the work. As already mentioned, they can be aimed at different social groups, as well as adopt different forms (workshops, training, meetings, games, projects, work groups...), and take place in both formal and non-formal education. Always having as a basis the educational intervention that transforms reality and flamenco as an ally in this social change.

The ethnography resulting from the research carried out shows the applicability and success of incorporating flamenco into social intervention; thus, offering a specific resource, linked to art, culture, and the Andalusian territory, which provides relevant support in socio-educational interventions that are traditionally developed with a significant lack of resources or support. In this way, flamenco can be a viable and optimal strategy in the development of interventions.

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SUSTAINABLE DEVELOPMENT AND SCIENTIFIC RESEARCH IN UNIVERSITY-BUSINESS RELATIONS: CHALLENGES AND CONTRADICTIONS ANGOLAN CONTEXT

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Abstract: This study shows the importance of the link between the university and the company, with the aim of analyzing the capacity to generate knowledge, through research, technological development and innovation in the process of knowledge transfer in the construction of a sustainable development model. An exhaustive review of the literature is carried out following the qualitative documentary method. Several national and international authors were consulted and even national educational plans and programs, an exploratory-descriptive investigation was carried out. Based on the results, we focus on the importance of linkage to achieve sustainable economic, political and social development for a country that is fighting against poverty and development, such as Angola. Proposing policies and strategies to link University-Business-Government are proposed. In the Angolan context, the challenges associated with the asymmetries of economic and political power that characterize our era are faced. The effort here implies a concentration on those issues of sustainable development in which it can play an important role in linking scientific research focused on renewed efforts. , interdisciplinary relevant to university policies and strategies in research issues, identifying strengths and weaknesses, stimulating the research process, generating scientific criteria and thought, managing to form the research habit and culture, as well as giving personal value to the work done and serving also as a means of feedback to the scientific community. applicable to Research, Development and Innovation (R + D + I).

Key words: Sustainable development; Research; Development and Innovation; university-business relationship; policy and strategies.

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DESARROLLO SUSTENTABLE Y LA INVESTIGACIÓN CIENTÍFICA EN LAS RELACIONES UNIVERSIDADES-EMPRESA: RETOS Y CONTRADICCIONES EN EL CONTEXTO ANGOLANO

Resumen. Este estudio muestra la importancia que tiene la vinculaci n universidad empresa para el desarrollo de proyectos y programas estrat gicos, encaminados a la construcci n de un modelo de progreso sostenible. Tiene como objetivo analizar la capacidad de generar conocimiento, a trav s de la investigaci n cient fica, y de poder transmitirlo entre los diferentes agentes econ micos y sociales que intervienen en los procesos de producci n, distribuci n y consumo, en el contexto angolano. Para ello se realiz una revisi n exhaustiva de la literatura, se consultaron varios autores nacionales e internacionales, as como planes y programas educativos aut ctonos, para lo que se efectu una investigaci n de car cter exploratorio-descriptivo. Con base en los resultados, nos centramos en la importancia de la vinculaci n para el logro de un desarrollo econ mico, pol tico y social sostenible, para un pa s que lucha contra la pobreza y por el desarrollo, como es Angola. Se proponen pol ticas y estrategias facilitadoras de vinculaci n universidad-empresa-gobierno. En este pa s, se enfrentan los desaf os asociados a las asimetr as de poder econ mico y pol tico que caracterizan nuestra era; el esfuerzo aqu implica una concentraci n en aquellos temas del desarrollo sostenible, en los cuales puede jugar un papel importante vincular la investigaci n cient fica enfocada a esfuerzos renovados, interdisciplinarios relevantes, a las pol ticas y estrategias universitarias en cuestiones de investigaci n, identificando fortalezas y debilidades, estimulando el proceso de investigaci n, generando criterio y pensamiento cient fico, logrando formar el h bito y cultura de investigaci n, as como otorgar valoraci n personal al trabajo realizado y sirviendo adem s como medio de retroalimentaci n a la comunidad cient fica, aplicables a la Investigaci n, Desarrollo e Innovaci n (I+D+I).

Palabras clave: Desarrollo sostenible; Investigaci n; Desarrollo e Innovaci n; vinculaci n universidad empresa; pol tica y estrategias.

Introduction

The era, which humanity is currently passing, has a large number of problems that urgently requires the activation of knowledge. It is the universities and research centers that are called upon to put into practice their role before society and the knowledge economy since it is urgent to build an intelligent society, which is a great challenge, due to its characteristics because of its cumbersome interconnections, its mutual relations, or its fragilities in common, all of which leads to the imperious need for intelligence when it comes to organizing ourselves.

Teaching and scientific research are part of the role that the University must play in society, taking into account that these results, both for future professionals, research, and projects that go forward within the University and outside it, will impact not only on the economy and politics but also on society and its way of life; therefore, the University has the responsibility, through the creation of knowledge, research, and innovation, to participate in the changes that society demands.

The purpose of higher education is to train citizens capable of developing the communities in which they live, through two of its essential functions: education and research, which enable them to be able to adapt their knowledge to the continuous transformations generated by science and technology.

However, higher education not only has the function of contributing to the nation's progress by providing the technically and intellectually trained labor force required by the productive sector, or to prepare individuals who are potentially the drivers of the country's issues, but also to focus on the formation of suitable human capital, capable of dealing effectively with the processes of change that promote technological, scientific, cultural, and socioeconomic progress of the country (Hanel and Taborga, 1988).

Higher Education Institutions (HEIs) have the duty and the possibility of contributing to the fulfillment of the Sustainable Development Goals (SDGs) since their role and mission within society makes them essential agents to achieve them by training individuals as actors of change, with the knowledge, skills, values, and attitudes required to contribute to this sustainability. These entities are accredited as impartial and reliable factors, which opens the doors to establish agreements and create spaces for cooperation between different actors, being education crucial to achieve this type of development.

The SDGs are a demand of the entire world community, adopted by the United Nations (UN), to eliminate poverty, protecting the planet and human beings, with the goal that, by 2030, humanity will enjoy peace and prosperity. Its integrating influence is recognized since performance in one area will have repercussions and effects on the others; likewise, it is proposed that development must guarantee economic, social, and climatic sustainability in a balanced manner. To achieve them, it is necessary that the technological and financial resources, inventiveness, and knowledge of society, as a whole and in all areas, are in function of their fulfillment (UNDP, 2022).

The 2030 Agenda is known as a global action plan in favor of individuals, the planet, and progress, as a continuation of the United Nations Sustainable Development Goals (SDGs); local and regional governments can influence through the implementation of state policies that raise awareness, the design and implementation of actions in accordance with these goals, so that the elaboration of development plans is, without distinction, seen by the countries as a necessity, where the formation of experienced human capital with strong scientific and technological foundations is taken into account, in addition to the generation of goods and services in accordance with market demands, without losing sight of Porter's (1990) statement, "national prosperity is created, not inherited" (p. 163).

Today, it is certainly known that it is the capacity for innovation that provides the source of wealth that guarantees modern energy resources, new riches, more efficient mechanisms, and cutting-edge production. Namely, depending on the number of investments a nation makes in the field of science and technology, so will be the availability of innovative competence, thanks to which it can assume the great challenges, supported by the standards established to cope in the areas of education, health, transportation, among others (Marcovith, 1991).

The objective sought by this research is to analyze the capacity to generate knowledge that university-business relationships have, through scientific research, based on the mission of higher education to "promote, generate, and disseminate knowledge through research" (Bravo, Illescas and Lara, 2016, p.1) taken to the Angolan context.

This document contains five sections: Introduction, explanation of the Methodology of the study, Theoretical Discussion: literature review where the challenges and contradictions of the university-industry link to generate knowledge, through research, technological development, and innovation in the process of knowledge transfer

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in the construction of a sustainable development model in the Angolan context, Results, and, finally, the Conclusions.

Knowledge economy

Peter Drucker (1969), with his text "The Age of Discontinuity," made the term knowledge economy popular, but it was conceptually developed earlier in 1962 by the economist Fritz Machlup. Establishing a suitable environment for the development of business innovation and technology-based entrepreneurship is the fundamental role played by governments to improve competitiveness in a knowledge-based economy; thus, providing public goods, such as scientific knowledge and human resources capable of creating knowledge to achieve the evolution of the economy.

The Knowledge Economy itself does not produce wealth and value through its transformation into information, but by participating in the process of generation or evolution of products and services, these have an added value. It is very important to emphasize that knowledge contains much more than information since it is data collected and processed, usable in all fields, while knowledge involves ways, criteria, methods to face and solve diverse situations and problems, tools or mechanisms, Know-how, Know-who, which also turns into more knowledge with more utility and added value, profitable and measurable for society.

Some definitions of the knowledge economy, such as the one proposed by Brinkley (2006), have been limited to productive sectors characterized by their direct relationship with new technologies and innovation. However, these definitions are insufficient for the analysis that concerns us here since the knowledge economy extends to all productive sectors, in addition to other spheres of society.

The World Bank (WB) defines it as an economy in which knowledge is created, acquired, transmitted, and used more effectively by individuals, businesses, organizations, and communities to foster economic and social development (World Bank, 2003).

Another definition studied is the following:

> Knowledge has always been central to economic growth and the progressive improvement of social welfare. The capacity to invent and innovate, that is, to create new knowledge and new ideas that are then materialized in products, processes, and organizations, has historically fueled development. There have always been effective organizations and institutions for the creation and dissemination of knowledge, from the corporations of the Middle Ages to the large companies of the early 20th century and from the Cistercian abbeys to the royal scientific academies that emerged from the 17th century onward. (David and Forey, 2002, p.1)

The aforementioned authors, when referring to the knowledge economy, consider quantitative change to be more important than qualitative change since the key element is an accelerated increase in the acquisition, generation, collection, and even storage of knowledge, decline of knowledge. In Brinkley's (2006) terms: What we see today is essentially more of the same but operating on a bigger scale and at a faster pace (Ibid., p.5).

It is by far a challenge to define precisely what knowledge economy is since this commodity - knowledge itself - is complex to determine. Hence, it is understandable that there is not a considerable number of definitions, and only a few of them admit of

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quantification. It is necessary to accept the absence of, at least, a definition that gathers all the elements referring to the knowledge economy, namely, indistinctly all of them have advantages and disadvantages.

According to the World Bank (2007), the strategy should have knowledge at its core and be guided by four components:

1. The educational base of national education and training:

The workforce must be made up of prepared, trained, and educated individuals with the skills to refine and apply their knowledge effectively.

2. Information access and telecommunications infrastructure:

An adequate and sophisticated information support will make the communication, expansion, and treatment of information and knowledge a more fluid process.

3. The innovation system:

The formation of an effective innovation system includes universities, research centers, consultants, advisors, other institutions, and organizations that produce new knowledge and techniques, appropriate the avalanche of knowledge worldwide and apply it to the new situations and needs of the community. Government investments in innovation, science, and technology should include the entire spectrum of infrastructure and institutional management, starting from the dissemination of basic technologies to the most progressive research tasks.

4. Institutional, governance, and business frameworks:

The system of government that prevails in the country and the economic stimulation it produces must provide the effective use and satisfactory granting of financing, stimulation of the entrepreneurial spirit, and the inventiveness, expansion, and correct application of knowledge.

From this approach, we can determine the importance that the WB gives to knowledge, it is evident that it considers the exchange of knowledge as a vanguard action, as well as the application of innovative solutions. The investment in the improvement of human capital is always relevant, as a guarantee of the possibility of acquiring appropriate skills of their social protection, and that in turn reaches each and every one of the members of the society in which they develop. Hence, it is understood that knowledge is a key factor in the WB's capacity to influence the global development agenda.

The words of Freeman and P rez (1988) help us to contextualize the above, when they refer to the development of activities in an exhaustive way to insert the knowledge obtained from scientific and technological progress in their materials, services, or productive processes, aimed at the incorporation of value and innovation. Within this pillar is the emergence of updated technologies, complete industries in their boom and bust, financing for infrastructure, changing movements in the global location of major companies, and technology industries, in addition to other transformations in structures such as labor and the organizational make-up of companies.

From all the above, it can be concluded that all the definitions of knowledge economy analyzed converge in two fundamental points, one is the magnitude and intensification of the usefulness of knowledge, and the other is the role it plays in society and the economy.

Method

This research is the result of a thorough review of the literature following the qualitative documentary method. Several national and international authors and even national educational plans and programs were consulted, an exploratory-descriptive research was carried out, with the objective of investigating both HEIs and the productive sector, the capacity to generate knowledge that the University-Company relations have, through research, technological development, and innovation in the process of knowledge transfer in the construction of a sustainable development model in the Angolan context.

University-business relations

In these times, globalization is present and spreads all over the world, causing constant changes and alterations. The university cannot be oblivious to this reality, just as it should not be oblivious to the demands of today's society. Only with a quality education, with a system that promotes and encourages timely and convenient research projects, in line with centrally drawn lines, focused on meeting and responding in a feasible way and aligned with the social demands that arise.

The whole panorama described above, in addition to a variety of adjustment policies adopted by African countries, leads to the analysis of outstanding issues, such as the role of the university and the African business sector in the 21st century. Hence, in addition to the fact that the existing backwardness in comparison with developed countries is a reality, the concern for achieving a strengthened link between two of the most decisive sectors in the development of society, such as, evidently, the university and the business sector, arises.

The primary role of universities is to create science by thinking critically through observation, description, and explanation of the phenomena that occur in nature and society. The university, in addition to training professionals, is also a creator of science that seeks the truth because a university that does not seek the truth ceases to be an academy. A higher education system must have implicit schemes of scientific research, where epistemological practice is exercised around national problems through applied science and discovery through basic science. If science is not developed, science pedagogy will not be developed either.

The university contributes to the scientific knowledge relationship, which is applied in the form of ideas, innovations, patents, research resources, practical problem solving, human resource training, technology, etc. The productive sector provides the relationship with knowledge of a technical nature, financial capacity, and a vast field of research, which requires the support of the university scientist. The meeting place of this selective relationship of cooperation, of a socio-economic nature, is the knowledge market, organized to share and transfer knowledge in a global social environment.

The knowledge market, formed by the University-Company link, connects these systems in the production, consumption, and transfer of knowledge. The achievement of levels of social and economic development typical of advanced economies depends on the capacity to generate knowledge, through research, technological development, and innovation, and to be able to transmit it among the different economic and social agents involved in the processes of production, distribution, and consumption.

The university has, among its functions, the production of knowledge, which has to acquire a new relevance since there is an increasingly higher confluence between

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technological development and scientific research. But, of course, this should not be done alone but with the participation of the government, as well as actors and officials from the business sector, together with the so-called science and technology system (Corona, 1994). This coincides with the situation in which the African university is being called upon to be more relevant and sensitive to the needs and demands of the population, at the same time that the industry is under the pressure of an increasingly fierce competition due to the globalized economy and the internationalization of technology, which forces it to assume a pressing position in the face of the accelerated pace of technological evolution.

From the perspective of the university, linkage has a clear purpose, which should be assimilated as the machinery that propitiates research to be of superior quality, together with university teaching, as well as a better identification with the demands of society. Seen from the point of view of the company, the linkage plays a primordial role within the competitive market, through the elevation of the efficiency of processes that strengthen the levels of generation of goods and services on the basis of the technology that has been transmitted by the university, which, in almost all cases, belongs to novel technological creations that propitiate not only a higher quality of the products but also lower costs.

Hence, the linkage between the university and the business sector is a process that is likely to receive stimuli, to the extent that both institutions contribute to a constant development and incentive to achieve the much needed technological and scientific progress that African nations need to face and leave behind poverty and backwardness, something that has not been achieved strongly in the Angolan universities.

Some authors, such as Saavedra (2009) and Mart nez Pav s, cited in Moctezuma (1996), agree on the need to build a bridge between the world of research and the productive sector, and this can only occur within the framework of effective cooperation (Saavedra, 2009); an approach that we assume to be very accurate since both sectors must interrelate and create mutual cooperation, from which innovative results can emerge in response to society's needs.

Theodore Shultz, Nobel Laureate in Economics in 1979, (quoted by Gra , 2015), stated in a clear way that "education is a form of investment, as opposed to those who consider it an expense (...) If we want our society to progress, it is necessary to invest in education" (p.1).

According to Joseph E. Stiglitz (2014), investment in education is one of the greatest concerns of governments, so if a country does not invest in education and does not promote its own industry (other than on the basis of exploiting its natural resources), it will remain stagnant, until, over time, it will end up disappearing. Education has a direct effect on people's lives and on society as a whole. If we want our society to progress, it is necessary to invest in education.

The educational system of a country should be one of the highest priorities for its government, investing in it would be the guarantee of having the necessary professionals to achieve the development it needs; so that the country that does not do so will be condemned to stagnation, over the years it will perish, as is also the case with industry, always preserving its natural resources.

History of University-Business linkage in Angola

During the last decades, Angola showed persistent highs and lows in the university-productive sector linkage, as well as low investment in science, technology,

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and innovation in relation to other nations, reflecting the growing decline in the last three federal public governments in the fields of production and application of knowledge.

Notwithstanding the importance and the benefits generated by the linkage of HEIs with companies in society, this form of partnership is still very scarce in Angola, which causes a decrease in the value given to this activity, as well as hinders the initiative to cooperate in this type of projects. The limited transfer capacity of Angolan HEIs makes it difficult for linkage actions to move to a second stage where the transmission of high technology is affirmed, conditioning the development of companies.

We are faced with various situations in which, for example, businessmen consider that universities do not take into account the problems faced by industry; the university is considered to be a promoter of knowledge, but there is no approach in this respect related to industry. The most relevant link that involves the company with the university are the short courses, which are not enough to carry out a strong cooperation activity. In addition, there are difficulties in the field of communication with respect to the companies, showing lack of interest and indifference towards the business sector, pride on the part of researchers, low installed capacity, among others.

It is necessary that the university connects with companies through strategies that allow it to advance towards a better educational quality and that, as a solution to society's problems, from the local to the international level, it is capable of strengthening its structures of institutional and state councils of linkage.

We must be aware that linkage is not a mandate of the government or the rector in turn, but by the will of the university and industry. To achieve linkage, it must be a fundamental part of the linkage units, national diagnosis, linkage networks, etc., to strengthen this chain.

Universities in Angola have not been immune to this trend, particularly since 2004, when the Angolan state urged public universities to seek new ways of obtaining resources to help sustain them. However, the effective results of the various linkage modalities still leave much to be desired and mostly remain in good intentions, in modest investments by the universities, and in revenues that either do not substantially improve the universities' income, or if they do, they are based on activities closer to consultancies and services in which there is no generation of knowledge or knowledge transfer.

We focus on the importance of outreach for the achievement of sustainable economic, political, and social development for a country struggling against poverty and for development such as Angola. To address the new processes, indicators will be established to reflect the extent to which universities have an institutional and normative development that favors linkage activities. This will make it possible to distinguish the university's potential to meet the proposed objectives, as well as to determine the integration actions aimed at the exploitation and use of the university's knowledge and capabilities, and the activities related to the generation of knowledge and the development of skills in the framework of interaction with the non-academic community.

Challenges and contradictions in the Angolan context

The Angolan population is approximately 18.5 million, with the majority residing in urban areas.

Non-oil revenues declined despite fiscal policy and administrative measures to improve and collect taxes, reflecting the economic slowdown. In the political context, Angola has maintained stability since the end of the 27-year civil war in 2002. In 2010, a

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constitution established a presidential parliamentary system with the president no longer elected by direct popular vote, but as the leader of the party that won the most seats.

Current President Jo o Louren o, of the People's Liberation Movement of Angola (MPLA) party, took office in September 2017. Since then, the government devalued the currency, tightened monetary policy, and resumed fiscal consolidation.

The largest spending cuts were implemented in public investments and subsidies. For 2018, the previous budget that fiscal consolidation would depend on wage cuts and investments. Both oil and non-oil revenues have declined more than expenditures and are partly responsible for the slowdown in fiscal consolidation, as shown in Figure 1.
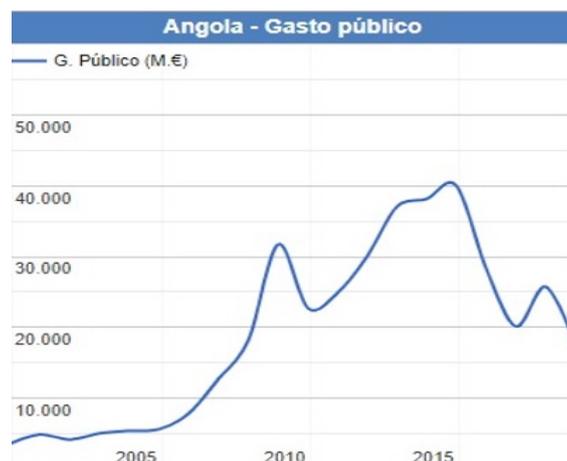

Figure 1. Public Expenditure Ranking Angola 2018

Note: Source: International Monetary Fund, Yearbook of Government Finance Statistics and data files, and World Bank and OECD GDP estimates. Angola.

Among these expenditures are those that could be devoted to investments in education, which greatly limits any progress in scientific research.

Among these expenditures are those that could be devoted to investments in education, which greatly limits any progress in scientific research.

As development challenges, Angola has achieved substantial economic and political progress; however, the country continues to face enormous challenges, including reducing dependence on oil and diversifying the economy, rebuilding infrastructure, increasing institutional capacity, and improving governance and public financial management systems, human development indicators, and living conditions. Significant segments of the population live in poverty, without access to basic services, and the country lacks participatory development policies.

Scientific research in Angola.

According to the National Statistical Institute of Angola, in public higher education, there is only one doctor for every 194 students, while in private higher education there is one doctor for every 526 students. It also points out that only 10% of teachers have a doctorate degree and 33% have a master's degree. These data demonstrate the little progress in scientific categorization achieved by university professors in this country. We believe that it is the work of scientific research that will result in the solution of numerous problems and challenges that Angola faces today and tomorrow.

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The SCImago Journal Rank is a measurement factor through which statistical information on the quality of scientific publications can be obtained by counting the number of times each publication has been cited. Thanks to this calculation, it is also possible to obtain weighted data on the relevance and reputation of the journals from which these citations originate. This indicator gives us the possibility of knowing the current state of the country in terms of scientific production.
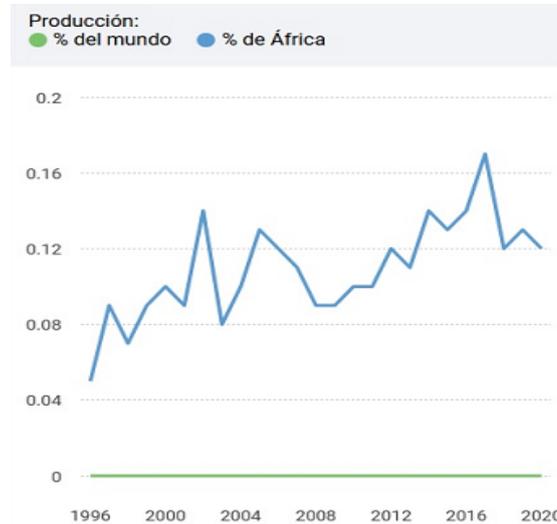

Figure 2. Scientific influence of academic journals on scientific production in Angola and the world.
Note: Source: SCImagoJournal Rank. Angola 2021

As shown in Figure 2, citation references from scientific journals in the region fluctuate indistinctly in an unstable manner, in the range from 1996 to 2014, being largely higher from that year but also experiencing a substantial decrease in 2017, which denotes the low university participation in this activity.

It is evident that the consultation of scientific articles corresponding to indexed journals was not common in previous years, a situation that has now changed. This statistic gives us an idea of the impact of scientific publications, both in the region and in the world, being an important element to take into account when it comes to knowing how scientific research behaves, essentially in Angolan universities.

We adopted the following definition of research, given by Arenas, Toro, and Vidarte (2000) because we consider that it gathers all the necessary elements related to the objectives outlined:

It is a human activity aimed at obtaining new knowledge and, in this way, occasionally, to solve scientific problems or questions. It is the act of carrying out strategies to discover something. It also refers to the set of intellectual and experimental activities of a systematic nature, with the intention of increasing knowledge on a given subject (p. 87).

By virtue of this definition, we can argue that research is a social process, which goes through stages and moments, resulting in a method for the production of knowledge. It is aimed at answering and providing solutions to problems, situations, and questions that arise, both in the field of knowledge and in the field of doing, from a position of analysis and reflection of the subjects or the theory. It is defined depending on the context in which it is carried out, by individuals, in individual or group exercise.

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One of the most pressing issues under investigation is poverty, which is increasing at high rates every day, especially in low-income countries, due to precarious economic conditions as a result of political conflicts, climatic conditions, etc., among which African countries, especially sub-Saharan Africa, stand out.

Michel P. Todaro (1988) points out that "development should be conceived as a multidimensional process involving changes in structures, attitudes, and institutions, as well as the acceleration of economic growth, the reduction of inequality, and the eradication of poverty" (quoted in Gonz lez, 2006, p. 166).

According to Todaro, all aspects of society must be involved in the achievement of development, providing substantial contributions that revolutionize and transform the existing scenario in each country or community.

Science, technology, and innovation are recognized by the UN as key elements to achieve social economic development, as well as their contribution to the fulfillment of the SDGs. Policy decisions must be based on scientific research and not just be mere inert witnesses, since their influence and performance provide the necessary indicators to know the level of progress of countries and how close they are getting to the SDGs; thus, giving the possibility of rectifying the course.

This is where the university comes into play. Its relationship with companies plays a preponderant role in the transformation of this economic scenario, from its local and regional environment, supported by a legal framework implemented by the Government, which allows it to obtain credits that facilitate the creation of research centers, where the University and the companies can link their active management through advanced projects of social impact.

Results

As a result of this research, the following proposal for Research, Development, and Innovation (R&D&I) policies and strategies is made with the intention of contributing to the process of knowledge transfer in the construction of a sustainable development model in the Angolan context.

- Promote research in all its forms: systematization of knowledge, exploratory studies, formative research, basic research, applied research, among others.
- Promote the insertion of HEIs researchers in the international scientific community through their involvement in international networks and joint work with foreign researchers.
- Prioritize research that: a) falls within the lines of the Research, Development and Innovation Agenda (R&D&I) of the Universities; b) has as its object of study the national reality and/or sub-Saharan Africa; c) may have an impact on the development (technological, economic, environmental, civic-institutional, and psycho-social) of Angola and/or the sub-Saharan Africa region; d) has an interdisciplinary approach; and e) is part of the PhD training process.
- Promote that the different academic units -both undergraduate and graduate- have their own lines of research in accordance with the R&D&I Agenda.
- Promote research competencies at all levels, strengthening and developing human resources of the highest level. In the promotion to academic management positions, as well as in new hires, in addition to considering the best academic level, a

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fundamental requirement to be considered will be the experience of the professionals in R&D&I.

- Implement a system to stimulate R&D&I activities through various mechanisms and through academic careers. In particular, when hiring, try to incorporate highly qualified and talented young professionals with experience and research curricula into the academic staff.
- Promote a teaching model that encourages, from the classroom, critical thinking and knowledge generation. In addition, to promote the feedback of teaching with the knowledge obtained from R+D+I activities at the University.
- Facilitate harmonious cooperative relationships between the different R&D&I projects and programs and those with master's degrees and doctorates.
- Increase the publishable intellectual production of researchers, professors, and students as a mechanism for disseminating the results of their work and projects, and to promote the use of publications as teaching support material.
- Seek greater promotion and representation of the intellectual production of University professors in social networks, recognized international platforms, and publications that are part of international indexing systems.
- Seek greater inclusion of articles by foreign academics in the University's periodicals, as well as the inclusion of the University's journals in international databases and catalogs of indexed journals.
- Transmit the results of research and innovation to civil society, the State, international organizations, and the country's private sector in an agile and timely manner, in order to achieve a better impact on society. All research should be shared with groups or actors of society interested in knowing the results of the same.
- Seek better international visibility in the area of innovation by creating alliances with universities, international organizations, innovation networks, international associations, as well as local innovation bodies and environments.
- Promote the production of patents and guarantee the protection of the University's Intellectual Property. A system of Intellectual Property with legal norms and specific regulations will be implemented.
- Favor the transfer of technology to the University and from the University to companies and society. In this sense, strategies will be designed for the transfer of results and dissemination of R&D&I activities.
- Establish mechanisms to attract foreign investment in research and development to facilitate the sustainability of R&D&I projects.
- Establish strategies for obtaining the necessary financial resources for the materialization of these R&D&I policies. The definition of a stable and well-defined budget for R&D&I would represent an enormous step forward in the consolidation of these university functions.
- Promote interdisciplinary programs that have an impact on sustainable economic, social, and human development in the different communities, municipalities, regions, and the country as a whole.
- Take advantage of strategic alliances -linkage to international networks and associations- for the establishment of joint research and innovation projects. Incentives will be provided for research that incorporates an international component.
- In their R+D+I activities, the Universities will promote professional ethics and social responsibility.

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Strategies for the Implementation of R&D&I Policies, in order for R&D&I Policies to acquire meaning, they must be expressed in concrete lines of action. The Directorate of Research and Social Projection currently has some valuable instruments of proven effectiveness to promote the development of the R&D&I system.

University policies on research, development, and innovation should not only be congruent in their implementation but also find in them the mechanisms and processes suitable for their realization. The express policy of intellectual production should be linked to the scale of merit of academics and articulated to a system of economic retribution according to intellectual productivity. In the same vein, intellectual property policies (and concrete actions) should be implemented in the universities with clear and expeditious procedures for the processing of patents, industrial models, registration of works, journals, software, and trademarks.

In order to promote the University's research activity in international scientific communities, a work plan will be drawn up with all the academic units of the Universities, in order to provide coherence and greater international projection to the research and innovation activities carried out.

Conclusions

The university-business linkage is a strategy that promotes the transfer of knowledge and technology; however, it is not an easy activity; higher education institutions must understand the importance and urgency of scientific research in terms of sustainable development and not maintain the traditional scheme where the University is only concerned about the future professional to graduate. It is necessary that the linkage with the company begins to play a new role, where universities guarantee the transfer of knowledge in union with the business sector to fulfill the part that corresponds to it, within society and its development.

With this research, it has been possible to demonstrate the importance of the link between the University and the productive sector, where the institutions of higher education in Angola must make important efforts to formalize the activity, where the contracts between other educational institutions, companies, and governments have been insufficient and have not been given a follow-up of their fulfillment, where they must make known to the productive sector the capacities to satisfy the problems in order to be attractive; where it is necessary to expand the generation of knowledge taking into account the new technologies.

Based on the results obtained, the proposal of policies and strategies for Research, Development, and Innovation, R+D+I, are presented, with the intention of contributing to the process of knowledge transfer in the construction of a sustainable development model in the Angolan context.

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