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TAKING ADVANTAGE OF THE NATURAL ENVIRONMENT, A TEACHING STRATEGY TO IMPROVE ACADEMIC PERFORMANCE THE YOUNG PEOPLE OF THE MUNICIPALITY OF OTANCHE-BOYACA

APROVECHAMIENTO DEL ENTORNO NATURAL, UNA ESTRATEGIA DIDÁCTICA PARA MEJORAR EL RENDIMIENTO ACADÉMICO DE JÓVENES EN EL MUNICIPIO DE OTANCHE-BOYACA

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ABSTRACT

The research presents the application of a didactic strategy that takes advantage of the natural environment present in the San Ignacio de Loyola educational institution, to improve the motivation and academic performance of students in the area of natural sciences. The work was carried out with sixth-grade students; To verify its efficiency, we worked with two groups, a control group, which maintained the traditional methodology used in the institution, and an experimental group, which was exposed to the strategy. In the first place, a survey was applied to the students to know their perception of the pedagogical practices of the area, followed by the application of a diagnostic test to know the previous knowledge regarding the subject to work, in this case, ecosystems, finally, it was implemented The strategy with the experimental group is based on a series of field trips and pedagogical guides that contextualize the topics to be worked on. It was determined that the students feel comfortable with the practices that are developed, however, they show interest in working with innovative methodologies, especially those that involve them directly in their learning process, in terms of academic results, the analysis of the diagnostic test was bold. that the level of knowledge of the students regarding the subject was similar, but after the intervention, the favorable results incline in a large percentage towards the experimental group, evidencing that innovative and contextualized strategies favor academic processes in students

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KEYWORDS: natural sciences, natural environment, teaching strategies, innovative methodologies, learning processes, motivation, academic performance.

RESUMEN

La investigación presenta la aplicación de una estrategia didáctica que aprovecha el entorno natural presente en la institución educativa San Ignacio de Loyola, con el fin de mejorar la motivación y el rendimiento académico de los estudiantes en el área de ciencias naturales. El trabajo se realizó con estudiantes de grado sexto; para verificar su eficiencia se trabajó con dos grupos, un grupo control, el cual mantuvo la metodología tradicional manejada en la institución y otro experimental el cual fue expuesto a la estrategia. En primer lugar se aplicó una encuesta a los estudiantes para conocer su percepción frente a las prácticas pedagógicas del área, seguida de la aplicación una prueba diagnóstica para conocer el conocimiento previo frente a la temática a trabajar, en este caso ecosistemas, por último se implementó la estrategia con el grupo experimental, está basada en una serie de salidas de campo y guias pedagógicas que contextualizaron temáticas a trabajar. Se determinó que los estudiantes sienten agrado con las practicas que se desarrollan, sin embargo muestran interés por trabajar metodologías innovadoras , en especial aquellas que los involucren directamente en su proceso de aprendizaje, en cuanto a los resultados académicos, el análisis de la prueba diagnóstica arrojo que el nivel de conocimientos de los estudiantes frente al tema era similar, pero luego de la intervención, los resultados favorables se inclinan en un amplio porcentaje hacia el grupo experimental, poniendo en evidencia que estrategias innovadoras y contextualizadas favorecen los procesos académicos en los estudiantes.

PALABRA CLAVE: ciencias naturales, entorno natural, estrategias de enseñanza, metodologías innovadoras, procesos de aprendizaje, motivación, rendimiento académico.

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1. INTRODUCTION

The area of natural sciences is closely related to the contexts and environments in which individuals operate, allowing them to acquire information and generate knowledge from their interaction with it and the experiences that emerge from it. This research proposes the implementation of a didactic strategy based on incursion, experimentation, and recognition of the natural environment that the educational institution has, contextualizing the themes through pedagogical guides adapted to the

realization of workshops and field trips to favor the learning and therefore academic performance in the area of natural sciences and environmental education in sixth grade at the San Ignacio de Loyola educational institution in the municipality of Otanche, Boyacá. From this, it also seeks to improve motivation and interest in the area.

The percentage of low academic results in natural sciences is constant in the school, according to the analysis of sixth-grade grades in the area in previous years during the years 2016, 2017, and 2018, more than 50% of the students were located at the low level according to the classification scale of the institution increasing the dropout and loss of the school year, which generates concern in the teachers of the area and the directives of the institution. Faced with this problem, it is necessary to opt for adequate and effective didactic strategies that mitigate and help improve the results previously obtained, and trigger a satisfactory academic and attitudinal result, in this sense, the active actors of the educational process must strive for innovative didactic strategies that develop skills and abilities to promote in students the acquisition of contextualized knowledge that encourages significant learning in the area and therefore satisfactory results in it.

When carrying out an analysis of the pedagogical proposal of the natural sciences area plan in the institution, there are basic elements of academic training such as autonomous work, the development of skills and competencies, and of course the achievement of significant learning. However, the weakness that students present in these aspects is evident, showing a minimal appropriation of knowledge.

This research work proposes the use of a resource available within the educational infrastructure, making use of it to design and establish didactic strategies in the area, giving teachers the possibility of directing students' learning, allowing them to actively participate in their learning processes in favor of institutional academic improvement and compliance with current educational requirements.

2. OBJECTIVES

2.1. General objective

Verify the impact of the implementation of the didactic strategy incursion into the natural environment in the improvement of academic performance in sixth-grade students in natural sciences of the San Ignacio de Loyola educational institution of the Municipality of Otanche - Boyacá.

2.2. Specific objectives

1. Use the natural environment of the educational institution as a didactic tool to improve the academic performance of students in the area.
2. Design didactic guides that guide students to the inquiry, exploration, and experimentation of the natural environment, following the contents of the area plan of the institution.
3. Evaluate the impact of the didactic strategy on the academic performance of students in the area and the motivation against the strategies used.

3. METHODOLOGY

3.1. Type of research

For the development of the research, a mixed methodology was used, this being the most relevant to answer the research question posed in the project, in this type of research techniques, methods, approaches, concepts, or quantitative and qualitative language are combined within the same research (Johnson and Onwuegbuzie, 2004) to obtain a more complete vision of the phenomenon under study.

Its outstanding feature is methodological pluralism, which, according to its defenders, allows us to derive a type of research of a higher level compared to research that involves a single method. On the other hand, the mixed research method can be understood as the exploration of differences; a forum for dialogue, or an opportunity for a better understanding of different ways of seeing, knowing, and evaluating (Greene and Caracelli, 2003).

This method was selected since, on the one hand, quantitative research gives the possibility of generalizing, allows evaluating knowledge about the subject, and making a comparison to measure the efficiency of the strategy when making the comparison between the two groups that are part of the research; On the other hand, qualitative research provides depth in the information, allowing the analysis of behavior and motivation against the strategy applied by the teacher, contextualization, and general analysis of the learning environment in the area.

3.2. Research approach

The work is oriented under the Educational Action Research (IAE by its acronym in Spanish). This modality, of an interpretive, exploratory, and descriptive nature, analyzes human actions and social situations in an educational community. According to Sadín (2003), “it contributes to the systematic reflection on social and educational practice with a view to improvement and both personal and social change. It unifies processes that are often considered independent, for example, teaching, curriculum development, evaluation” (p. 165).

According to Minerva (2006) the IAE: “constitutes a process of reflection-action-change-reflection, by and for the improvement of the teacher's practice, through his active participation, aimed at overcoming the problems and needs of the classroom, the school, and the community, enabling dialogue between theory-practice-theory” (p. 116).

For Lewin (1992) with Action Research, theoretical advances and social changes can be achieved simultaneously, through stages that consist of: a diagnosis of the problem situation, information gathering, information interpretation, design of an action plan for the solution of the problem, implementation, and, finally, an evaluation of the strategy based on the results obtained. Likewise, this type of research is characterized by being a participatory, collaborative process, which enables self-criticism, allows theorizing the practice, and involves the collection, recording, and analysis of information.

Action Research assumes teaching as a research process, in which, as worked during the development of the research, all the subjects involved in the process intervene as co-researchers (sixth-grade students) and the teacher as the main researcher, who directs and guides the process, allowing to transform, improve, and enrich the teaching work, reflected in the academic success of its students, which is intended with the making of this project.

3.3. Sample

The sample was taken from the students of two sixth grade courses of the San Ignacio de Loyola educational institution, a control group (course 6-1) with 36 students and an experimental group (course 6-2), of 36 students, for a total of 72 children, who are between 11 and 14 years of age, from families that live mostly in rural areas, who are engaged in mining, agriculture, and livestock practices as a means of subsistence. They are families with limited economic resources, where the adult caregivers, whether parents or grandparents, have low levels of education.

By carrying out the study in two groups, one control and one experimental, it was possible to establish a comparison between the efficiency of the strategy incursion into the natural environment and the traditional pedagogical practices used in the approach to the contents of Natural Sciences, for the generation of meaningful learning and, therefore, the improvement of academic performance.

3.4. Stages of the research

For the development of the research, informed consent was previously requested from the parents of the students who would participate in the project, who had to sign.

The project was developed in three phases:

- In the first place, a survey was applied to the students of the two sixth grade courses validated in the opinion of an expert (control group -experimental group) to demonstrate their attitude and motivation in the subject and the establishment of innovative strategies in the area. With a total of 5 questions, it was intended to identify if the students showed motivation towards carrying out didactic activities such as field trips, which allowed them to improve the learning processes in the natural sciences, generating meaningful learning.

  A diagnostic test type ICFES (acronym in Spanish for Colombian Institute for the Promotion of Higher Education) validated in the opinion of an expert was applied in two sixth grade courses to identify the previous concepts of the students, in the subject seen during the third academic period according to the area plan of natural sciences and environmental education of the institution, which corresponds to ecosystems.

  The test was designed with questions taken from the ICFES question bank for the Biology test, selecting those related to ecosystems themes in sixth grade. With a total of 25 questions, focused on the fulfillment of basic learning rights

(DBA for its acronym in Spanish) and the required standards proposed by the national ministry of education for the sixth grade in the third academic period. The questions are grouped according to each of the standards as follows.

Question 1 to question 11. Standard 1: characterize ecosystems and analyze the dynamic balance between their populations

Question 12 to question 19. Standard 2: proposes explanations about biological diversity taking into account the climatic characteristics

Question 20 to question 25 standard 3: establishes adaptations of some living beings taking into account the characteristics of the ecosystems in which they live and the relationships between them

- Starting the third academic period, three field workshops were applied to the experimental group under the PTA (program all to learn) model validated in the opinion of an expert, focused on each standard established by the national ministry of education for the corresponding subject, each workshop had a work-guide divided into two parts, a work exclusively in the field and a second part in which the students consolidated the knowledge they acquired during the field phase through a series of activities, the control group received the classes of the same subject traditionally, in the classroom. The data obtained from the experimental group during the field workshops were recorded using the field diary as an instrument.

- Field diary: Adapted https://www.mitrabajoessocial.com/guia-para-elaborar-el-diario-de-campo-incluye-plantilla/ Information obtained through observation in the field workshops carried out with students during the third academic period was recorded.

- At the end of the third period, a final test (same diagnostic test) was applied to the two groups, to analyze and compare the learning in the two courses regarding the result of the diagnostic test, in this way to be able to evaluate the efficiency of the strategy incursion into the natural environment.

3.5. Systematization and analysis criteria

The systematization of the information is done by resorting to tables and figures used to organize the data of the interview and tests carried out, besides the information recorded in the field diary from the observation of the development of the classes, using as a didactic strategy the incursion into the natural environment to demonstrate the motivation and the development of competences in the students during the development of the project.

The diagnostic test was analyzed by calculating the correct answers in each of the questions in the two groups (control and experimental), taking into account the strengths and weaknesses in each of the standards to be evaluated for the ecosystem subject.

The verification of the learning of conceptual contents achieved by the students is the product of the comparison between the final test applied to each of the groups, using frequency tables and histograms made with the SPSS statistical program to determine the distribution of the data and their frequency, grouped into performance levels according to the institution's assessment scale and also the corresponding average of each group, to give a concrete answer to the research question.

4. RESULTS AND DISCUSSION

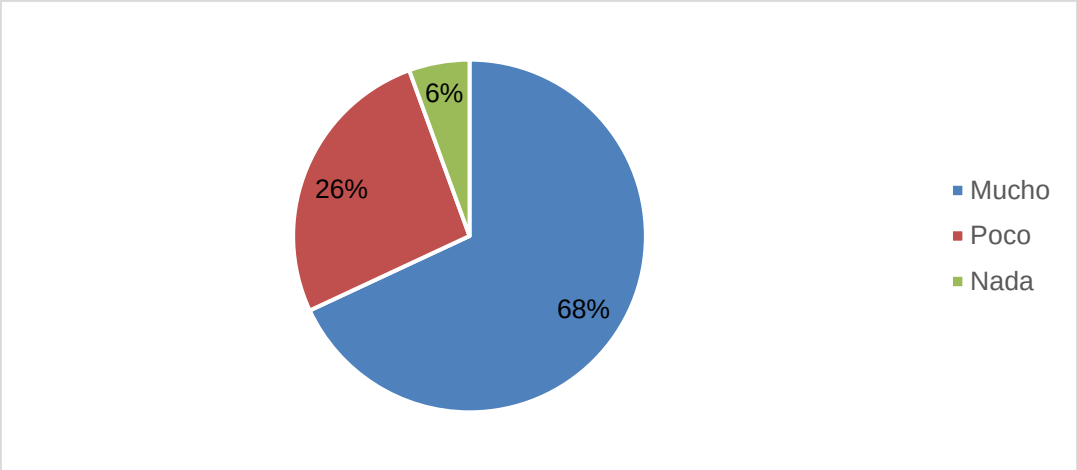
The results of the surveys and tests carried out are presented as follows. First, the qualitative analysis is shown. According to the answers given by the students, their perception of the area, their interest, and motivations in it are researched based on the pedagogical practices used by the teachers and, on the other hand, the statistical results and analysis of the diagnostic and final test in the control and experimental group.

4.1. Perception and expectations of the students regarding the area of natural sciences and its pedagogical practices

The information obtained in the survey was analyzed establishing categories according to the perception and answers given by the students in each question. The test was carried out in both the control and the experimental group for a total of 72 students before starting the third academic period, that is, before the intervention that was done with the experimental group.

The first question posed was: Do you consider natural science learning at school important for your life? To which 100% of the students answered that learning natural sciences is important due to factors related to their age, their context, and their dreams. Students find a relationship between the area of natural sciences and the learning of knowledge that explains phenomena in their daily life and their relationship with the environment. According to Juan Manuel Gutiérrez Vázquez (1984) cited by Fumagalli (2002), children demand knowledge of natural sciences because they live in a world in which a huge number of natural phenomena occur for which the child himself is eager to find an explanation. This makes it necessary for teachers to provide learning spaces with innovative strategies that meet the needs of students and generate meaningful learning.

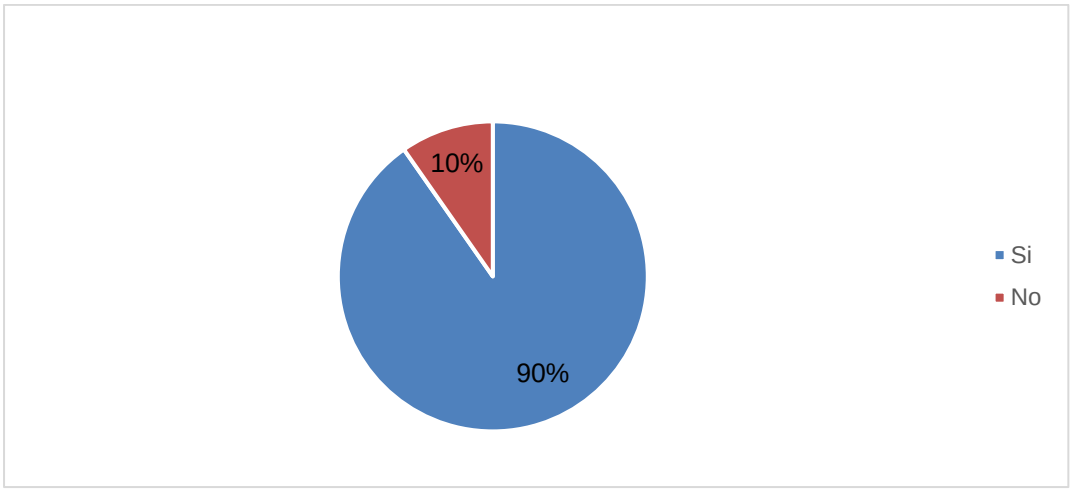
To the question “Does the development of science classes generate motivation to learn the concepts of the area?” 68% of the students stated that they felt motivated in learning the topics of the area, 26% stated that they felt little motivated, and 6% were not motivated by the subject. (Graph 1)



Graph 1. *Does the development of science classes generate motivation to learn the concepts of the area?*
Source: Author of the research.

Motivation is not a factor that can be attributed solely to the personal characteristics of the student, its presence or absence is also influenced by the relationships between students and their teachers and the pedagogical processes that teachers carry out. According to Ausubel, the key to motivation lies in the interest that is created for new learning. The results reveal that although the majority feel motivated, a large group is on the opposite side, which raises a difficulty in generating meaningful learning in the topics of the area. According to Pomar (2001), one of the aspects that most attracts students and increases their motivation is the possibility of discovering and understanding for themselves aspects related to their daily life, therefore, it is the teacher's function to privilege activities that involve the resources of the medium, those that allow the child to approach the elements and characteristics of the environment to provide them with experiences that facilitate their learning, increasing their interest and motivation in the area.

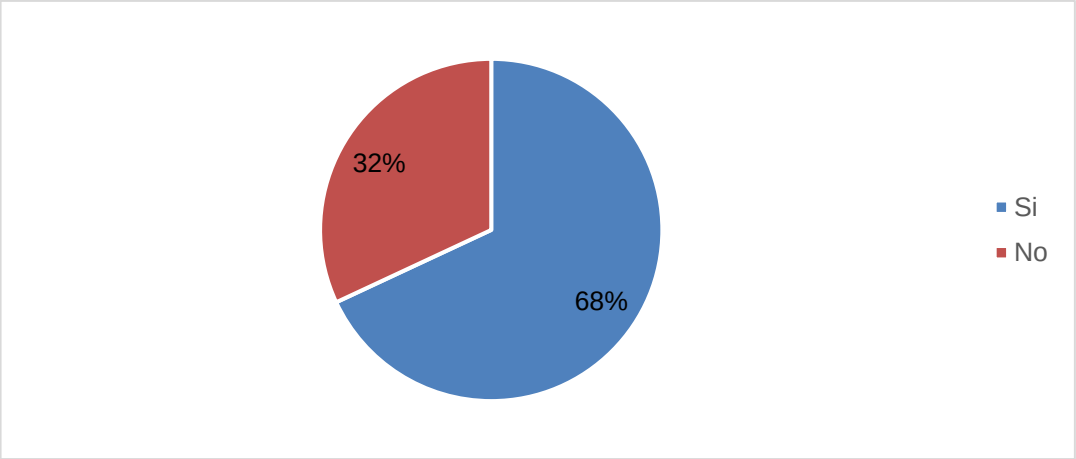
Therefore, the students were asked the question: Do you think that the activities carried out in the natural sciences classes are enough to achieve meaningful learning? To which 90% of them stated that the activities carried out in the area help them to achieve significant learning in the area (Graph 2)



Graph 2. *Do you think that the activities carried out in natural science classes are enough to achieve meaningful learning?*
Source: Author of the research.

Within the answers given by the students, they state that the teacher's explanation is adequate to understand the topics, they also show interest in them, which is why they are easy to understand. However, at the time of being evaluated, the results show a contrary phenomenon, evidencing that a large percentage of the students did not understand the subject seen, the above reflects that the methodology used by teachers in the teaching-learning process is still memory-based and momentary since it does not create any impact or process in the student that allows him to relate and understand it to internalize it. Bruner attaches great importance to the direct activity of students on reality, to achieve a contextualization of learning that allows them to associate and remember it easily, regarding what Bruner proposed, pedagogues such as Ausubel and Novak argue that learning must be significant and not memory-based, for this the new knowledge must be related to the student's previous knowledge, highlighting the need to generate innovative and contextualized strategies that favor meaningful learning.

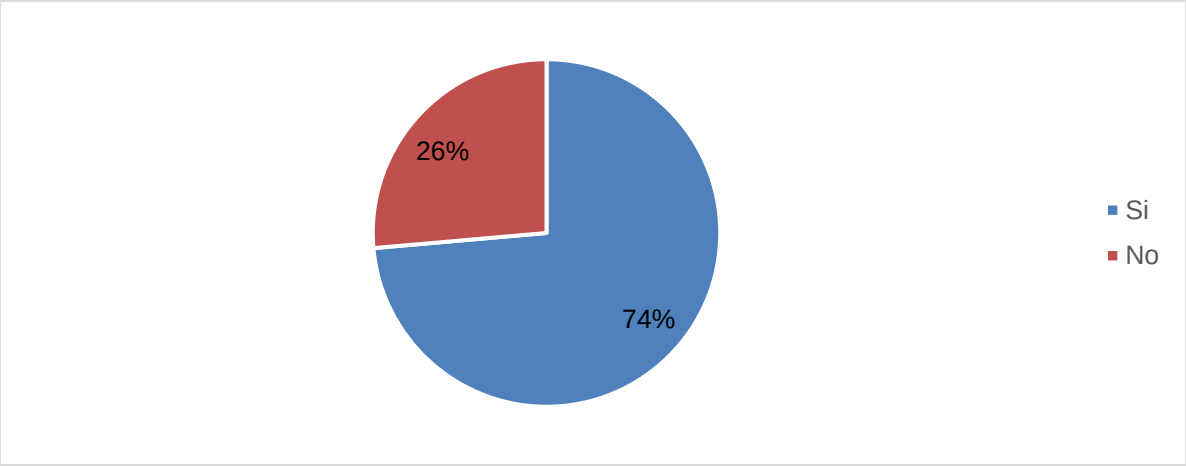
Taking into account the above, the students were asked if they would like other types of strategies to be implemented in the area, different from those used by their teacher, to which 68% answered affirmatively (Graph 3) wishing that new strategies in the area were implemented, according to the answers obtained in the interview, the students refer to activities such as Videos, educational outings, laboratories, among others.



Graph 3. *Would you like other types of strategies to be implemented in the area, different from those used by your teacher?*
Source: Author of the research.

This highlights the need to replace traditional methods that most of the time are tedious and not very motivating, with more didactic tools that allow more dynamism in the classes and interaction between the actors of it, Vigotzky argues that it is important that the teacher creates necessary conditions that provide the student with essential experiences for the formation of concepts. For this, the didactic materials become mediators aimed at achieving this function, at the time of giving the class, Ausubel affirms that the media and how the message is transmitted play a fundamental role in the learning of the individual. Therefore, teachers must be willing to establish more didactic strategies that favor teaching-learning processes, generating a positive impact and appropriation of knowledge, and this in turn is reflected in the academic results of students.

As mentioned above, it is known by teachers and supported by many research that the strategies used in class facilitate the apprehension of knowledge for students, allowing them to achieve significant learning and successful achievements, taking into account the active role of the student in their training process to know their perception, for this the question “Do the pedagogical and didactic strategies used by the teacher of the natural sciences influence their academic performance in the area?” was raised, showing that 74% of the students consider that the strategies used in the area (laboratories, videos, group workshops) do influence their academic performance, (Graph 4) stating that thanks to these they have managed to better understand the concepts related to the area or have seen an improvement in their performance since its implementation.



Graph 4. *Do the pedagogical and didactic strategies used by the teacher of the natural sciences influence your academic performance in the area?*
Source: Author of the research.

According to this, Porlán (2000) suggests that teaching processes should influence children's learning to facilitate the appropriation of knowledge and ways of thinking and acting, which they cannot learn spontaneously. For this reason, the strategies used in the exercise of pedagogical practice must be directed to the fulfillment of these goals.

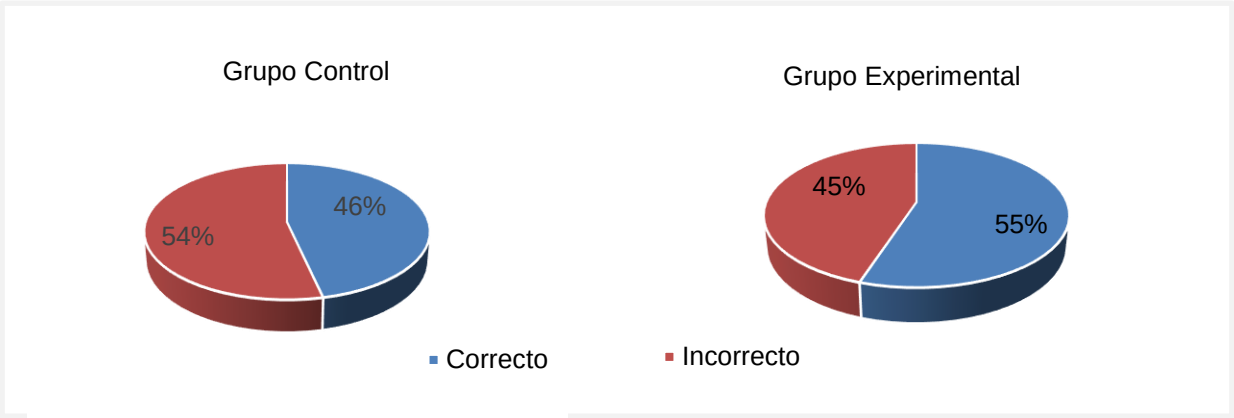
4.2. Analysis diagnostic test and final test

For the analysis of this test, graphs were made of each of the questions in the two tests for each group from these results, a comparison was made of the three standards to be met according to the NME in the third academic period for sixth grade, before and after the implementation of the strategy.

4.2.1. Analysis by standards

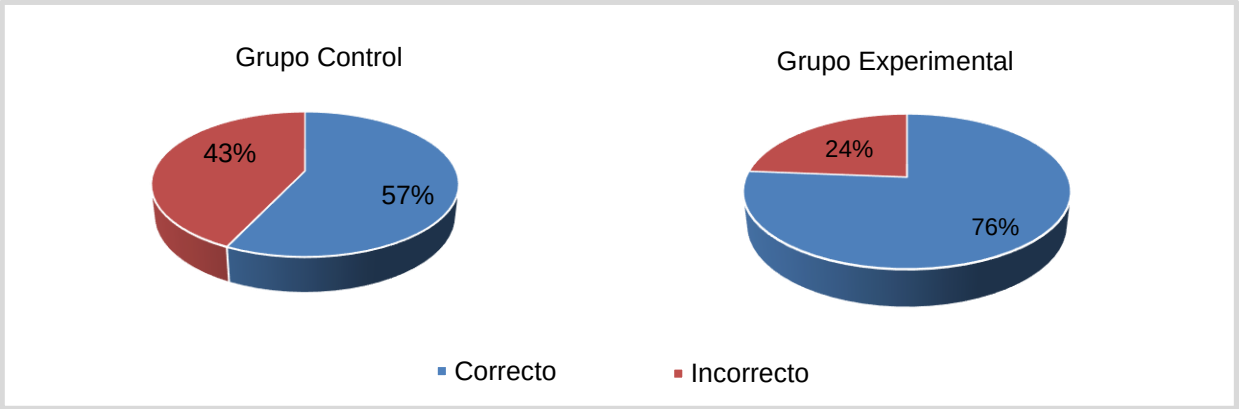
The diagnostic test applied to each of the groups aimed to determine the level of knowledge of the students regarding a specific topic, which includes three standards for sixth grade. Taking into account the origin of the mostly rural students, it is expected to have similar results in the two groups, besides highlighting the previous concepts of each student regarding the subject that has already been acquired in previous school years or as a product of their own experience. On the other hand, the final test is carried out to establish a comparison in terms of the results between the experimental group, in which the strategy of incursion into the natural environment was applied, and the control group which worked traditionally in the classroom after the third academic period in which the topic corresponding to ecosystems is developed, the following results were obtained from the above.

Standard 1: Characterizes ecosystems and analyzes the dynamic balance between their populations



Graph 5. *Results of standard diagnostic test 1*
Source: Author of the research.

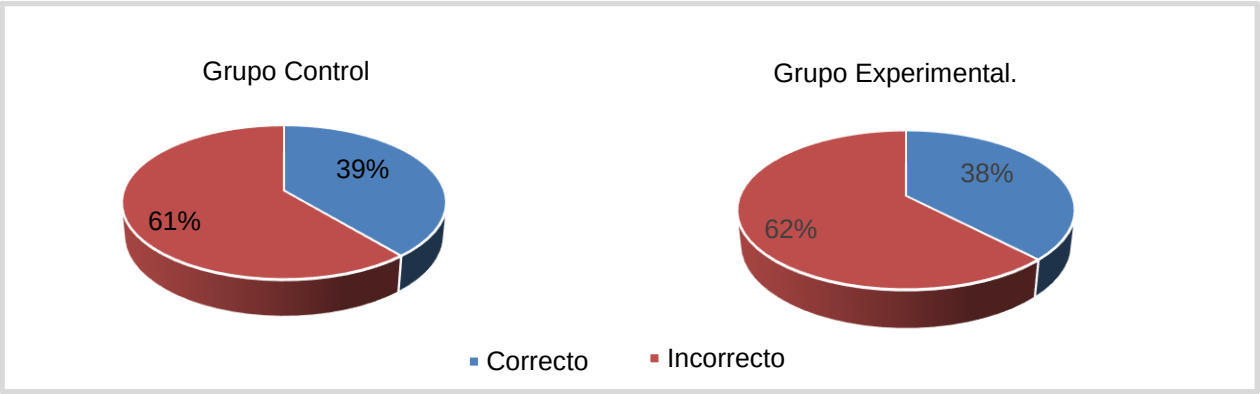
The results obtained in the diagnostic test show a better performance in the questions focused on compliance with standard 1 for the experimental group, as shown in Graph 5.



Graph 6. *Results of standard final test 1*
Source: Author of the research.

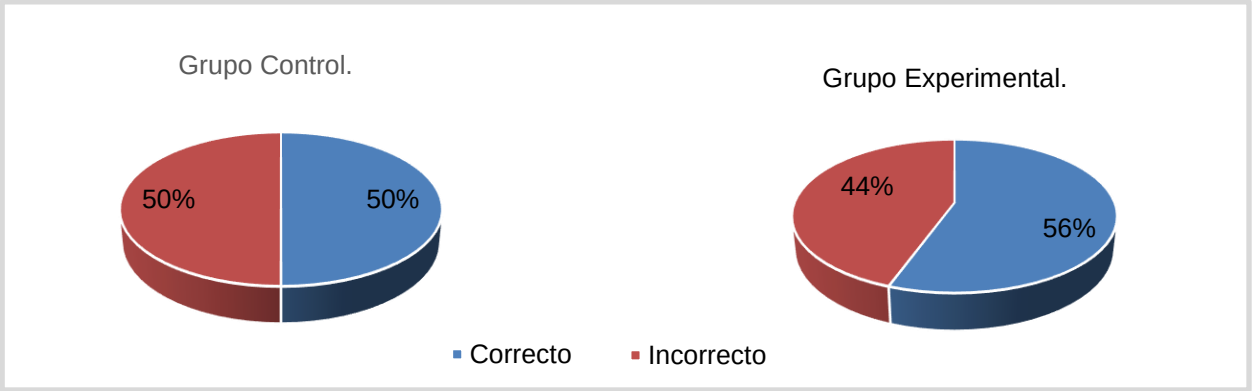
In Graph 6, it is observed that the experimental group obtained better performance in the questions focused on standard 1, compared to the control group, although the two groups presented a better result compared to the diagnostic test, this was higher in the experimental group.

Standard 2: Proposes explanations on biological diversity taking into account climatic characteristics



Graph 7. *Results of standard diagnostic test 2*
Source: Author of the research.

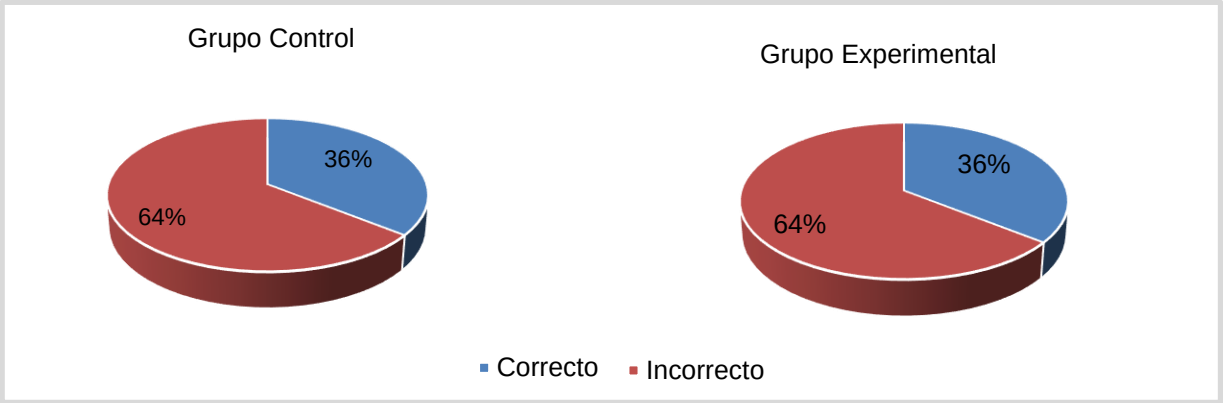
The results obtained in the diagnostic test show a better performance in the questions focused on compliance with standard 2 for the control group, with a not very wide difference of 1% (Graph 7).



Graph 8. *Results of standard final test 2*
Source: Author of the research.

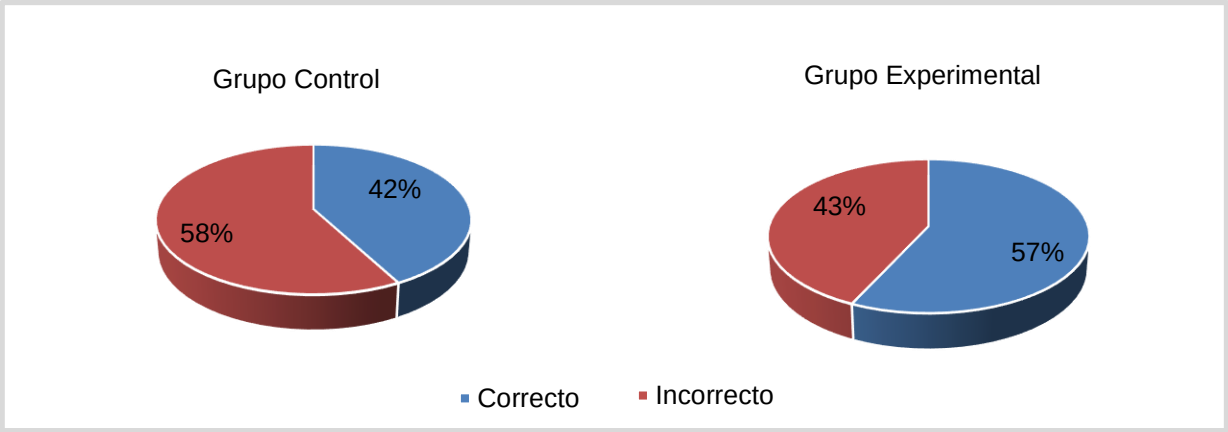
It is observed in Graph 8 that the experimental group obtained better performance in the questions focused on standard 2, compared to the control group, increasing the percentage difference compared to the diagnostic test, which shows a greater approach of the students of the experimental group to compliance with the standard.

Standard 3: Establishes adaptations of some living beings taking into account the characteristics of the ecosystems in which they live and the relationships between them.



Graph 9. *Results of standard diagnostic test 3*
Source: Author of the research.

In the results obtained in the diagnostic test, it is observed that the two groups do not present a difference in percentage, in relation to standard 3. (Graph 9)



Graph 10. *Results of standard final test 3*
Source: Author of the research.

It is observed in Graph 10, that the experimental group obtained better performance in the questions focused on standard 3, compared to the control group, although the two groups improved their results compared to the diagnostic test, the experimental group obtained a higher percentage.

The previous results show that students have prior knowledge regarding the specific subject under study, reflected in the results of the diagnostic test, either as part of their school process or as a result of their own experiences, as the students come from rural areas, they have daily contact with the environment, which allows them to recognize phenomena and situations that occur in nature. According to the above, students throughout their development have forged learning, these for a better understanding and analysis must be structured at school. According to Chevallard

(1985), “school science is not the science of scientists, but there is a process of didactic transposition of scientific knowledge when it is transmitted in the school context of teaching” (p.23). The foregoing points to the fundamental role of the teacher by providing students with tools, methods, or strategies that allow them to relate and transform their learning, bringing it closer to scientific knowledge, to achieve a greater apprehension of them, contributing to expand and enrich their knowledge.

The results of the final test, which was developed after the implementation of the strategy incursion into the natural environment in the experimental group, show a better performance of the students compared to the control group, which did not present any intervention, evidencing that by having experiences related to learning, in this case by being in contact with nature, students better relate their previous concepts, acquire greater security when expressing them, clarify their ideas, and build knowledge that goes beyond memory, allowing them to apprehend it and that, in turn, it persists, this being reflected in their academic performance.

4.2.2. Normality test analysis

The tables and graphs produced by the SPSS program during the data systematization are shown below. It should be taken into account that the educational institution's assessment scale ranges from 1 to 5, distributing the performances as shown in the following table:

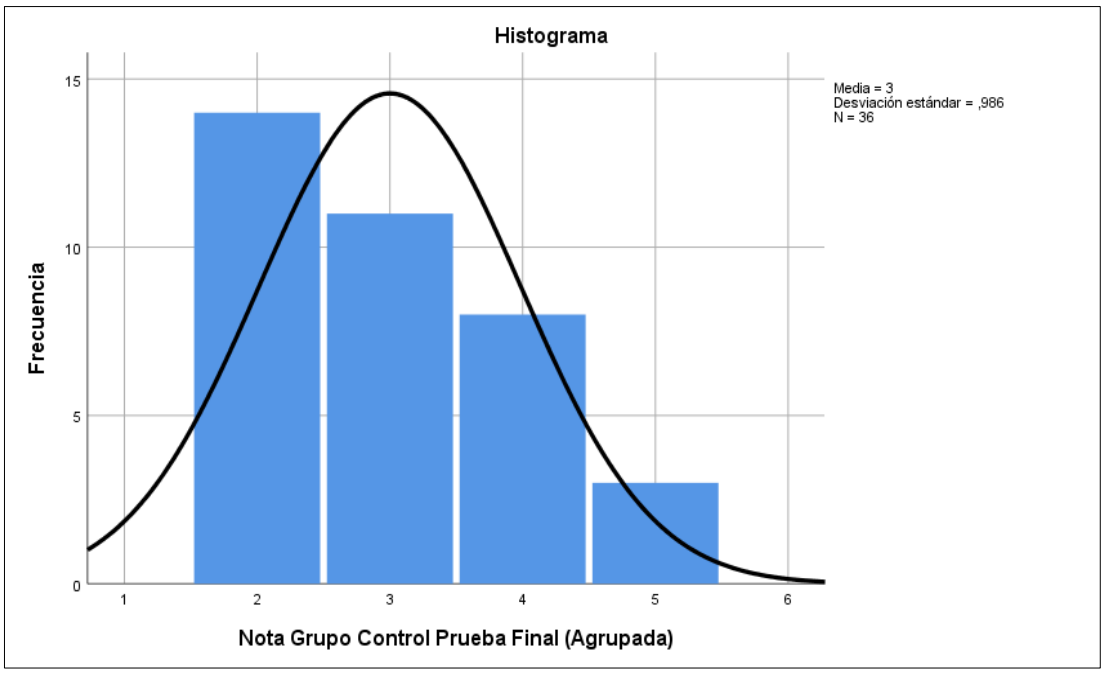
Table 1. *Quantitative performance level values*

Performance level	Range
SUPERIOR	4.5 - 5.0
HIGH	4.0 - 4.4
BASIC	3.0 - 3.9
LOW	1 - 2.9

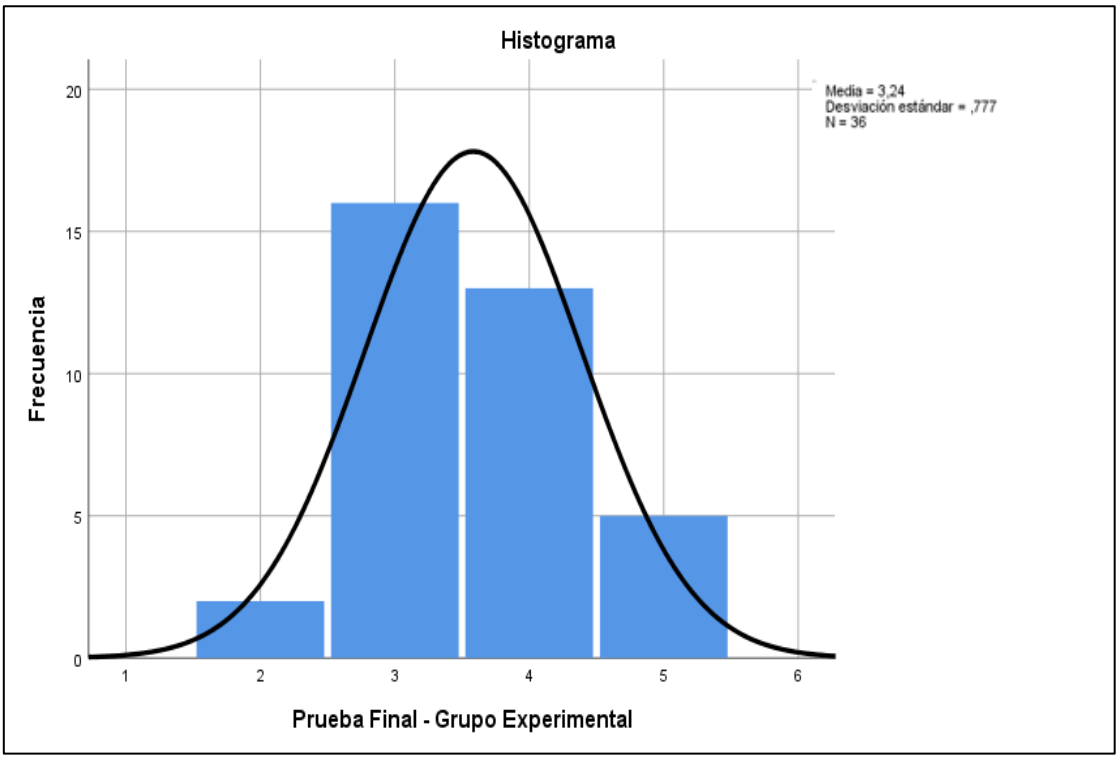
Source: San Ignacio de Loyola educational institution.

To make the graphs, the data were grouped with a range of one unit difference, having as minimum data 1 and maximum data 5.

Results Final test



Graph 11. *Control group normality test*
Source: Author of the research.



Graph 12. *Experimental group normality test*
Source: Author of the research.

Graphs 11 - 12 show the histograms of the final test for the control and experimental group with a fitted normal curve superimposed, the histogram of the control group (graph 11) shows a distribution with a tail to the right, that is, most students in the

control group obtained low marks mostly between 1.5 and 2.9, followed by averages of 3.0 to 3.5 after seeing the ecosystem topic, compared to the diagnostic test, no student obtained the minimum score, although the majority are in the low and basic level, 8.3% of the students managed to reach a high level with grades between 4.1 and 4.4, a level that was not present in this group in the diagnostic test, there were no results of superior performances.

In the histogram thrown for the experimental group (Graph 12) a significant decrease is observed in students with low grades, lower than 2.9, compared with the diagnostic test, in this group, most of the students are in the basic and high performance levels, with grades between 3.0 and 4.4, 4 results were recorded for the superior level.

The previous results show the improvement in the academic performance of the students exposed to the implementation of the strategy incursion to the natural environment, showing an increase in the performance of the students compared to the control group and the results obtained in the previous year, in the same topic, during the same period.

4.3. Field workshop analysis

For the analysis of the results obtained in the field trips, acronyms are used according to the number of trips carried out as shown in the following table

Table 2. *Field diary abbreviations*

Table of acronyms	
Abbreviation	**Description**
FD. 1	Field Diary 1
FD. 2	Field Diary 2
FD. 3	Field Diary 3

Source: Author of the research.

It was possible to determine that through field trips students increase their liking and motivation for the area of natural sciences, curiosity and continuous questioning is favored by being in direct contact with the phenomena to be studied (FD. 1, FD.2, FD. 3).

During the making of each of the field workshops, through observation it was possible to determine that the students develop the field guide demanding continuous teaching accompaniment following their orientations, as the fieldwork progresses, the students take on the challenge of wanting to carry out the activity on their own, although they constantly go to the teacher to have their approval (FD.1), following the activities of the guide, the favoring of collaborative learning is evidenced, some students assume leadership roles, helping and advising their peers in carrying out activities.

The students express their satisfaction with the activity carried out, arguing that they understand some previously seen processes and the learning of new things, they also show curiosity and amazement for knowledge of topics related to natural

sciences (FD. 2) they feel emotion and satisfaction when raising their own hypotheses and deductions that are approved by their classmates or the teacher, evidencing their motivation and pleasure for the subject that is being worked on by being able to relate it to what they observe in their environment.

During the third outing, a student-teacher detachment is observed, although the teacher interacts with them showing a willingness to attend to the concerns and needs, the students prefer to carry out the activities alone or rely on their own classmates (FD. 3).

The teacher investigates through questions to identify the evolution in student learning, supporting this inquiry in various activities that highlight the appropriation of knowledge (FD. 1, FD.2, FD. 3). According to Fumagalli (2002), school science is made up of conceptual, procedural, and attitudinal contents, which gives rise to many spaces in which students can highlight the learning they have achieved and therefore give the teacher guidelines to guide the process towards knowledge construction. This was favored when carrying out the field trips, as it provides the teacher with a new space and tools different from the traditional ones used in the classroom to verify the learning of the students. Besides, during the field trips, there was the active participation of all students (FD. 1, FD.2, FD. 3) where a continuous reflection and questioning on some phenomena of the visited environments was observed.

The implementation of strategies that involve the active participation of students in their learning process shows a better disposition of them in terms of interest, motivation, and the appropriation of knowledge related to the subject seen to be able to relate it to their environment, since, as Fumagalli 2002 maintains, it is necessary to resort to multiple teaching strategies that facilitate the active appropriation of conceptual, procedural, and attitudinal contents, thus enriching the spontaneous knowledge of students.

5. CONCLUSIONS

The results and analysis obtained through the research process allow us to conclude that:

The implementation of the strategy incursion into the natural environment allowed students to reinforce their previous knowledge and acquire new knowledge in a contextualized way, improving their motivation towards the subject and academic performance in it, facilitating the development of research skills, and favoring positive attitudes like responsibility, camaraderie, and commitment.

There was evidence of the need to modify traditional teaching practices and promote methodologies by resorting to available resources from the environment that respond to current training needs in favor of academic improvement of students and therefore institutional improvement.

The impact of the strategy implemented from the approach of meaningful learning for the teaching of natural sciences, not only contributed to the improvement of

academic results, it fostered the abilities and skills of the research task in the students.

It was possible to determine the great impact that the guide didactic material used by teachers generates on students, since it plays a fundamental role in learning, since it facilitates children's access to knowledge, stimulates their creativity, and in turn enriches educational practice.

Strategies that involve the student as an active subject of learning favor their level of responsibility with themselves, with their peers, and with the area, giving them autonomy and security in their learning process, allowing them to successfully achieve the goals proposed in the area.

Once the research is finished, the difference between the results of the two groups involved becomes evident, favoring the implementation of innovative and contextualized strategies that benefit the learning processes of the students. This proposal generates an outlet for learning based on mechanical transmission and reception, which does not generate any impact on students, causing little motivation and poor academic performance.

The strategy that is proposed in this research is transferable and replicable in other educational institutions, seeking to improve the teaching-learning processes contextualizing topics of the area, involving students in their academic processes, and in turn awakening motivation and interest in their comprehensive education.

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