

Teaching Strategies for Text Comprehension of Basic Education Students

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Abstract

The study aimed at establishing the incidence of teaching strategies on the reading comprehension of basic education students. Hence, an applied methodology of quasi-experimental design was developed, with the application of the Solomon model of four intact groups. Innovative teaching strategies were tested and their results were gathered in instruments such as assessment tests that were validated by communication experts, and were also analyzed through descriptive and inferential statistics (Kruskal-Wallis), which proved that the use of these strategies improved significantly the expected learning outcome in text comprehension.

Keywords: educational strategies, basic education, secondary school students, learning

Introduction

Throughout time, human beings have tried to answer many questions on various topics such as the creation of the universe, the transience of life, the omnipotence of death and other existential issues that nowadays are still unresolved questions. Notwithstanding, from his cosmovision, man interprets the phenomena or tries to understand them within his context and culture characterized by diversity. In this sense, the understanding of facts, phenomena, real or fictitious worlds embodied in physical or digital texts requires complex cognitive processes where the reader and the verbal world of the authors are involved. In this regard, the International Program for Student Assessment (2009), within the cognitive processes, considers words as *understanding*, *using* and *reflecting on* competencies involved in text processing, as well as the basis of digital and printed textual understanding.

Evidently, digital technologies have evolved rapidly, and they have changed the way texts are generated and presented; consequently, constant changes have influenced the way students read. The Organization for Economic Cooperation and Development (2009) argues that digital texts are having a profound impact on form and content. However, a question arises: How much do you understand from what you read? How do you apply it in your daily life? In other words, do you play the role of an active agent in understanding texts from their perspective, from their culture, from their context and their diversity? So therefore, textual understanding demands the connection between reader and text both in substance and in form. The OECD (2009) points out that, regarding written texts, the reader must locate a material object and use categorization and organizers to locate the information of interest within that object.

In Peru, text comprehension evidences a constant and serious problem that does not allow shortening the gaps within the region and the global world, as evidenced by the results of different studies on reading literacy done at national and international level. In this sense, PISA (2016) shows that between 2009 and 2015 the results in reading comprehension increased by 14 points for each assessment cycle. However, our country is not in the top rankings in relation to the participant countries.

Reading comprehension goes beyond graphics, graphic signs and the text, since it encompasses a verbal world constructed from the author's point of view. Consequently, it is a complex activity that requires a leading role on the part of the reader, the student, the professional, in order to build knowledge on the basis of the confrontation of their ideas with those proposed by the author, with the aim of acquiring autonomy to develop in dissimilar and adverse contexts. The texts allow us to read the world with its cultural, social and political practices (Freire & Macedo, 2005).

Reading is present in all fields of knowledge, for example, in the educational field, in school, college, university and other contexts. Text comprehension highlights the interrelationship between the reader and the text in a dynamic way, with the aim of confronting values, customs, associating ideas and building knowledge. However, within schools, teaching activities should be directed at fostering the global interpretation of texts, through diverse teaching strategies, dynamic, collaborative, ludic, and other kind of programs. These would break with traditional teaching, in order to ensure that students go beyond the written texts, and that they can understand the implicit, the explicit, the linguistic and the paralinguistic, the real and the fantastic, the denotative and the connotative in it.

The current research was carried out in the district of Rimac, where students showed difficulties with text comprehension, as shown by the results obtained in the census test (2016). This test showed an undeniable challenge regarding the learning of the reading skill in secondary school, as only 14.3 percent achieved the expected learning, while 85.7 percent did not. Therefore, their learning requires mechanisms that enable them to reverse these results, not only in numerical terms, but also in the ability to solve problems or adverse situations that arise in everyday life. It is in this perspective that the research problem is defined: what effect does teaching strategies have on text comprehension in the 2020 fourth grade secondary school students?

In this perspective, the assessment guides us to pedagogical reflection regarding the various actions to be carried out as an educational institution. It is urgent to meditate and talk to teachers about the fruits and problems concerning the reading skills of the

students, and about the design of innovative pedagogical strategies with the purpose of strengthening the learning achieved, in order to assess the needs and difficulties for text comprehension.

Consequently, there arises an urgent need to involve all educational agents, such as principals, teachers, students, and parents, in the reflection, in order to decide and execute activities that contribute to student learning.

Research is fed by large studies regarding the application of didactic strategies for reading comprehension, such is the case of those who carried out an investigation aimed at the application and assessment of technological educational material, collaborative work, and the promotion of critical thinking in order to reverse difficulties in comprehension. The studies stem from the evident learning insufficiencies and the use of ICTs in reading comprehension and reasoning skills. The researchers in question used a quasi-experimental design, and significant results were obtained for both teachers and students regarding reading and the use of ICTs, since nowadays these are fundamental skills that society demands in any area of knowledge, such as in teaching and in the application of strategies (Barreyro, Injoque-Ricle, Formoso & Burin, 2019; Cabero, Piñero & Reyes, 2018).

In the same line of our research, there are studies that, based on the low rates of results in reading comprehension -- something which is becoming more acute in students every day—implemented reading strategies to improve the reading process constituted by the *before*, *during* and *after* processes oriented to the recovery and organization of information. Special attention was given to the inference of expository texts and the strategic and interactive use of specific tasks. Pretest and posttest evaluations were used without specifying a control group. It was concluded from these studies that the results are significant; therefore, the metacognitive strategies are established as tools that favor the students' reading process.

This topic is approached from an interdisciplinary perspective to promote and consolidate reading habits in every context. In this sense, the promotion of reading is aimed at familiarizing or bringing books closer to students in a natural and attractive way in order to encourage young people and children to read (Jiménez, Manzanal & Baridon, 2019).

The topic addressed is in no way alien to a significant number of researchers. This is evidenced in those who carried out studies in order to establish the degree of improvement of the reading comprehension skills with multimedia resources and the printed media, as well as the execution of a mediation program in the explicit teaching of the processing of expository and narrative texts. These researchers used the quasi-experimental design whose instruments were standardized tests. Sessions to improve reading comprehension were also implemented; therefore, the resources used showed better results in the experimental group. Furthermore, it showed the correspondence between the comprehension of texts in English and those in Spanish (Fonseca, Migliardo, Simian, Olmos & León, 2019).

In the same way, but in different spaces and contexts, other researchers approached the development of comprehension from a traditional perspective and traditional models, such as the observation guide and the written test. Empirical and traditional works allowed evidencing that the didactic strategies on reading do not favor it. Therefore, research proposed active and interactive teaching strategies and autonomous learning strategies, and they implemented tools that allow reading comprehension in a creative and innovative way in order to follow a series of organized actions to optimize the literal, inferential and evaluative reading practice, besides promoting it in an interactive and noticeable way (Medina & Nagamine, 2019).

Finally, several investigations were oriented to the analysis of reading comprehension and its association with school performance, and also to the dynamic and innovative teaching strategies whose purpose was to relearn, motivate, understand and stimulate reading skills and learning tools for reading control and academic performance. Two groups of readers were targeted: skilled and unskilled. In this sense, skillful readers show mastery in emotional control, selection of important information, as well as critical and creative thinking. Thus, reading control for comprehension evidences academic performance and becomes an important and predictive variable to improve results (Acurio & Núñez, 2019).

Notwithstanding, in reference to teaching strategies, these are considered to be instruments used by teachers in their teaching activities, that favor the implementation and development of competencies (Pimienta, 2012).

Given that the social dynamics and the interests of students are so different, it is necessary to rethink the role of teachers for using teaching strategies relevant to the different contexts and social demands; consequently, these represent logical constructions and systematic procedures aimed at achieving learning and teaching with the fundamental intention of facilitating learning (Fraile, Tobón, 2009).

Under the aforementioned perspective, the current social context and the vertiginous changes mobilize us to action, and they turn the teacher into a protagonist of the changes that lie ahead; however, the challenge the teacher faces is oriented to plan didactic instruments that allow significant learning for self-regulation and participation in society (Tobón, Prieto & Fraile, 2010).

Hence, teaching strategies are a set of actions aimed at making pertinent and intentional decisions so that students can achieve their goals and learning objectives in accordance with educational contexts (Schlag, Florax & Ploetzner, 2007).

Teaching strategies become a sequence of learning activities articulated and oriented to the achievement of goals and objectives with the mediation of the teacher. In other words, this set of combined and coordinated activities is very relevant for teachers and students in any context and educational level (Tobón, Prieto & Fraile, 2010, Hernández, et al., 2019).

From another perspective, strategies are understood as a set of behaviors that the student assumes during the learning experiences to interpret the information he or she must learn (Genovard & Gotzens, 1990; Weinstein & Mayer, 1986).

Teaching strategies play a leading role in the achievement of learning to the extent that they match students' interests and needs to the expectations of the students. Consequently, teachers play a fundamental role in reference to the choice and application of strategies that make it possible to achieve learning objectives. In our study we used the strategies of *what I see*, *what I don't see*, *what I infer* (QQQ for its Spanish acronym), mind maps and *what I know*, *what I want to know* and *what I learned* (SQA for its Spanish acronym).

The QQQ teaching strategy is oriented to investigate in the students their previous knowledge, to develop questioning as well as critical, creative and hypothetical reasoning through the discovery of the relations among the parts that conform a whole (Pimienta, 2012).

Mind maps are visual organizers that allow the graphic expression of information on a topic. In addition, they increase the capacity to assimilate, process and recall that information. The purpose is to organize and express learning through the association of ideas (Pimienta, 2012).

Finally, the strategy what I *know*, what I *want* to know and what I *learned* (SQA) seeks to gather the previous knowledge of schoolchildren, identify the unknown about the subject matter, and verify the significant learning achieved (Núñez, et al., 2018; Pimienta, 2012).

Strategies should not only be oriented towards the acquisition of knowledge, but also to the improvement of reading skills, in order to become an activity where they show all their abilities to discover the linguistic and paralinguistic meanings raised in the text in a denotative and connotative way. For this reason, reading competence involves the coherent elaboration of the ideas presented in the texts so that they form a textual unit (Arnoux, Nogueira & Silvestri, 2003).

Furthermore, the understanding and interpretation of written texts contributes in a relevant way to the autonomy of the subjects, since it is a necessary tool for the development within the learned society. This important and transcendent activity in the education of people is based on three axes: learning to read, reading to learn and learning to enjoy reading in different environments and contexts (OECD, 2009).

It is important to emphasize that comprehension is the most important thing when reading a text; the effect of oral language and the effect of spelling are simply secondary. In this regard, Cassany (2013) considers that concerning the understanding of texts, it is very important to develop skills, abilities and processes that enable the activation of previous knowledge, establishing analogies, formulating suppositions, contrasting ideas, thoughts, and contexts in order to construct meanings and understand the text and context.

One learns by reading newspapers, magazines, reports, books, chronicles, essays. In short, this activity allows people to assume positions, make value judgments and form independent individuals. This implies that reading is somehow a social action oriented to the interpretation and representation of what is read (Cassany, 2013; Van Dijk & Kintsch, 1983).

Likewise, three major conceptions of reading are considered: a linguistic, a psycholinguistic and a socio-cultural perspective. If the focus is limited to the written code, this is oriented to the decoding of the words in the text; on the other hand, if the focus is on the cognitive processes, this is more complex and active, which demands making inferences and activating previous knowledge; finally, from a socio-cultural perspective, reading is a contextualized activity where habits and values of the readers intervene (Cassany, 2009).

From a contemporary point of view, Pinzás (1995) considers reading as a sequence of steps to build and interpret personal meanings where the reader puts his or her reasoning at stake; that is, the reader actively participates in front of the text by interpreting, imagining or constructing meanings. Reading in today's world is said to require new demands from the educational system in order to overcome academic difficulties regarding the teaching of the reading skill.

Cervantes (2017) considers that reading comprehension is oriented to the construction of knowledge, acquisition of knowledge and the ideological transformation of people. This implies that reading enables us to promote, for example, values for a harmonious coexistence in different contexts with students from different peoples and cultures.

Finally, understanding as a process involves knowledge of the world, culture and language. The knowledge of language allows the handling of knowledge that facilitates understanding; culture contributes wide knowledge of roles, values that are contrasted with what is proposed in the texts and finally knowledge of the world offers a wide vision of the society and its diversity.

Reading comprehension gathers information to formulate hypotheses, to reflect on the form and substance of what is read, in order to make a value judgment, to construct meanings, to contrast values and beliefs, to look at the local, regional and global contexts in a different way; in short, it involves the interaction of a set of activities to construct and internalize new meanings.

The literature reviewed leads us to determine that reading comprehension implies within its process and complexity three levels that are approached by different scholars and with coinciding points in each of them. These are the literal, the inferential and the critical levels.

Literal comprehension is oriented to the memory of events, periods, scenarios, details or ideas explicitly stated in the texts. Students can identify, locate information contained in texts, determine macrostructures and superstructures. The reader can ask the following questions: *what, who, where, when* and *how*; consequently, the student's skills are focused on information retrieval (Condemarin, Galdames, Medina, 1991; Pinzás, 1995).

Inferential comprehension considers that the ultimate goal of reading is oriented to the construction of meanings; consequently, at this level, students have to recover their previous knowledge, formulate hypotheses about what they will find in the text, go beyond literal meanings, reformulate their hypotheses; that is, the development of their cognitive tools will acknowledge the global coherence of the text (Condemarin, Galdames, Medina, 1991; Cassany, 2009).

Likewise, inference is the ability of the reader to understand and overcome gaps or doubts that arise during the reading process. Thus, the reader's ability is oriented towards the construction of understanding through the articulation of his or her knowledge, experiences and interpretations from the context (Cassany, Luna, Sanz, 2014).

Inferential reading comprehension refers to the implicit, referring to everything that does not explicitly appear in the text. These are related to the predictions and hypotheses that can be made about what is read. However, the reader is supported by a good basic understanding that allows him/her to have enough input to understand beyond what is written (Pinzás, 1995).

Critical reading brings into play the reader's ability to make value judgments by contrasting the ideas and values set forth in the texts with the knowledge, beliefs, and experiences of the reading agent. The discourse has a communicative character and the reader's purpose is the processing of information (Condemarin, Galdames, Medina, 1991; Cassany, Luna, Sanz, 2014).

The reading approach used in the current study is fed by the contribution of several authors whose ideas converge unanimously on the process of reading comprehension. The model assumed is the interactive one, which is characterized by the active participation of the individual who uses his knowledge to interpret and reconstruct the meaning of the texts from his perspective, his culture and his mental schemes. Consequently, the reader's leading role is evident in the intimate interrelationship between himself and the text. This interaction allows the reader to construct new meanings, modify and integrate new knowledge into his or her mental schemes (Cassany, 2014).

The study is framed within the framework of teaching strategies; in line with the context, the general research problem answers the following question: what effects do teaching strategies have on reading comprehension in fourth-year secondary school students? In the same way, the specific problems that arise respond to the question: what effects do the teaching strategies have on the literal, inferential, and

critical-evaluative levels in the 2020 fourth-year students of secondary education from the I. E. P. Enrique N. Espinosa, Rímac? Studies on reading comprehension generate great expectations in all times, in all spaces, and in all fields of knowledge, especially in education, and it is always the focus of attention as a central theme of debate. We therefore consider that the subject matter addressed is central and transcendent in the teaching-learning process; therefore, it is supported from a theoretical, methodological and practical perspective.

Theoretically, reading is an interactive process oriented to the interaction between the reader and the text, whose purpose is to understand through interaction the contraposition between what the reader reads and what he knows about the topic addressed. Reading as an activity is complex and begins before the actual reading starts; it is undertaken with expectations, with the topic of interest, with culture, with experiences, with the reader's values that are contrasted with those set out in the texts; i.e., the implicit theories of reading comprehension (Cassany, Luna, Sanz 2014).

Taking into account the previous perspective, the reading process and its complexity require that teachers know the roots of reading, the pre-reading activities, the conception of reading, techniques and resources for understanding oriented to the deep knowledge of reading and its implication in the development of man and his active development in society.

Methodologically, the study used a plan of activities in order to verify the effects on the dependent variable of reading comprehension. The instruments considered for the study are standardized; however, they were submitted to the judgment of experts who would be able to determine their validity and reliability. A *Software* was also used for processing the data obtained.

From a practical point of view, the research, and above all its results, will be at the service of the directors and coordinators of the educational organization in order to make relevant decisions for the benefit of students and teachers. Consequently, the results must be established as pillars to optimize textual understanding through teacher reflection on the teaching strategies of pedagogical practice.

The general objective is to demonstrate the effect of teaching strategies for reading comprehension in basic education students. Finally, the general hypothesis has been structured as follows: there are significant effects of teaching strategies on the comprehension of texts of students in basic education.

Method

The methodology of the study refers to a set of actions, processes that the researcher carries out in order to make the study work concrete. In this sense, the study used the hypothetical-deductive method, which consists of a systematic approach based on some assertions as hypotheses to be later refuted or falsified, drawing from the same conclusions that must be compared with the facts (Bernal, 2014).

The research was applied in a quasi-experimental way, since it is made up by independent and dependent variables, where the researcher applies a plan or strategy to four groups, with the purpose of observing the impact on the dependent variable, to contrast results and draw conclusions. In this type of design, the individuals were named prior to the experiment (Hernández & Mendoza, 2018).

Concerning the research design, it is experimental of a quasi-experimental type. In this sense, the design of four Solomon's groups has been used, which is constituted by two experimental and two control groups. It is equivalent to saying that four Solomon groups

were determined where an experimental group and a control group receive the Pretest; however, all four groups experience the application of the posttest. In this type of design, the different groups are made up of randomly assigned individuals, organized in the following way: groups 1 and 3 are the experimental groups (those under treatment); however, groups 2 and 4 are the control groups (only group 2 was given the Pretest). Finally, all groups were submitted to the posttest.

On the other hand, the operationalization was carried out; this is a process where variables are transformed into units of measurement. It is made up of three sub-dimensions with eleven indicators, twenty items whose answers respond to a scale of values of correct and incorrect: achieved (13 or more), not achieved (0-12).

The population was made up of school children in the VII cycle of regular basic education; therefore, they make up the units of analysis in this study. This implies that the population is made up of all individuals belonging to the same area of study.

The sample is a representative fraction of the population under study from which data are collected for their corresponding analysis and the results found can be generalized or extrapolated to the entire population (Hernández & Mendoza, 2018). In our work, the sample was predetermined by the registration system, where each subject was part of the study of the control and experimental groups. For this reason, the study is framed within the non-probabilistic sampling; since the choice of the elements that constitute the population depends on the particularities and intention of the researcher and not on the probability (Hernández & Mendoza, 2018).

Taking into account that the instruments for collecting data are also the material means for collecting and processing information, the research used the questionnaire as an instrument to obtain quantitative data on the study variable. This questionnaire corresponds to a standardized objective test with a set of items with multiple choice of Arias, Varas (2014). In this sense, the questionnaires constitute a set of structured questions to be answered without the intervention of the researcher.

In this regard, Hernández and Mendoza (2018) stated that the "questionnaire is a set of questions in relation to the variables to be measured" (p. 217). As for the present study, the questionnaire is oriented to measure the variable called reading comprehension by means of closed, clear, concrete and intelligible questions with a simple, direct and familiar vocabulary for the participants.

For measuring the validity of the instrument there was taken into consideration the judgment of ten experts (thematic and methodologists) who pointed out the sufficiency and relevance of the instrument, thus concluding with its applicability.

As far as reliability is concerned, the measurement instrument fulfills its objective insofar as the repeated application to the same individuals or objects produces similar results. To determine the reliability of the instrument in this research, a pilot test consisting of 25 elements was applied and the Kuder-Richardson KR-20 test was used for its analysis, in which the reliability coefficient was 0.73; therefore, it was determined that the instrument was reliable and had a high tendency.

The application of the comprehension test was made to two fourth-year sections A and B, according to the Solomon model, and was distributed as follows: groups 1 and 3 are the experimental ones, while groups 2 and 4 are the control ones. In week 1, according to the project schedule, the Pretest on reading comprehension was applied, consisting of four texts with multiple choice alternatives, the duration of which was estimated at 45 minutes for groups 1 and 2.

From week 2 onwards, the strategies of the Textual Adventure program were applied to groups 1 and 3, a treatment to show the effects on reading comprehension. The didactic strategies were made up by a set of activities whose application was systematic to the chosen individuals.

The application of the program lasted ten weeks, two pedagogical hours per week in the area of Communication. It was organized in the following way: during three weeks we worked on Julio Pimienta’s QQQ didactic strategies; during the following three weeks of June, on the SQA didactic strategies, and three weeks of July, on the teaching strategies related to mind maps, considered as powerful learning tools oriented to learning achievements through their relevant application (Núñez, et al., 2019).

In the last week of July, the same test used as an entry tool was applied to groups 1 and 3, as well as to groups 2 and 4 with the aim of creating the pertinent correlations between the control groups and the experiment groups.

The Kruskal-Wallis test was used for data analysis. Its statistical procedures are oriented towards the analysis, interpretation and representation of data in descriptive graphs to understand the results of the research. The statistics helped to organize and order the data with reference to the study variables.

Results and discussion

It can be corroborated that in the pretest, Experimental Group 1 had an achievement level of 70.0 percent while in Control Group 1 it was 54.5 percent. The results of the posttest indicate that Experimental Group 1 had the total achievement and the control group, 72.7 percent. Likewise, in the posttest, Experimental Group 2 had the total achievement and Control Group 2 the 90.9 percent of success. It can be stated that both posttest groups achieved 100 percent the literal level; however, Experimental Group 2 did not have the influence of the pretest evaluation.

Experimental Group 1, in the pretest, had an achievement level of 80.0 percent while in Control Group 1, it was 81.8 percent. The results of the posttest indicate that Experimental Group 1 had the total achievement and the control group had 27.3 percent. Likewise, Experimental Group 2 obtained the achievement of 90 percent in the posttest, and Control Group 2, 36.4. It can be stated that Experimental Group 1 achieved 100 percent and Experimental Group 2, 90 percent at the inferential level; however, Experimental Group 2 did not have the influence of the pretest.

It can note that Experimental Group 1 had an achievement level of 50.0 percent in the pretest, while Control group 1 obtained 27.3 percent. The results of the posttest indicate that Experimental Group 1 had the achievement of 80.0 percent and the control group achieved 72.7. Likewise, Experimental Group 2 obtained the achievement of 90.0 percent in the post-test, and Control Group 2 achieved 72.7. It can be stated that Experimental Group 1 achieved 80 percent and Experimental Group 2 achieved 90 percent at the evaluative level; however, Experimental Group 2 was not influenced by the pretest.

It was perceived that in the pretest, Experimental Group 1 had an achievement level of 45.5 percent while Control Group 1 obtained 9.1. The results of the Posttest indicate that Experimental Group 1 had the achievement of 90.9 percent and the control group had 27.3. Likewise, in the Posttest, Experimental Group 2 had 90.9 percent of total achievement and Control Group 2 had 36.4. It can be stated that in reading comprehension, Experimental Group 1 achieved 90.9 percent and Experimental Group 2, 90.9 percent; however, Experimental Group 2 was not influenced by the pre-test.

Table 5 shows the average ranges obtained after processing the information. For reading comprehension, Experimental Group 1 obtained 33.35, while Experimental Group 2 obtained 29.65; Control Group 1, 11.36, and Control Group 2, 13.45; thus, this revealed that Experimental Group 1 had a better average in relation to the other groups, as a result of the application of the program and the influence of the pretest. In reference to the Posttest literal level, the processing

Table 1. Descriptive levels of the Pretest and Posttest literal level of the control group and the experimental group.

| | Experimental 1 Literal Pretest | | Control 1 Literal Pretest | | Experimental 1 Literal Posttest | | Control 1 Literal Posttest | | Experimental 2 Literal Posttest | | Control 2 Literal Posttest | |
|----------------|-----------------------------------|-------|------------------------------|-------|------------------------------------|-------|-------------------------------|-------|------------------------------------|-------|-------------------------------|-------|
| | f | % | f | % | f | % | f | % | f | % | f | % |
| Achievement | 7 | 70,0 | 6 | 54,5 | 10 | 100,0 | 8 | 72,7 | 10 | 100,0 | 10 | 90,9 |
| No achievement | 3 | 30,0 | 5 | 45,5 | 0 | 0,0 | 3 | 27,3 | 0 | 0,0 | 1 | 9,1 |
| Total | 10 | 100,0 | 11 | 100,0 | 10 | 100,0 | 11 | 100,0 | 10 | 100,0 | 11 | 100,0 |

Table 2. Descriptive levels of the Pre-test and Post-test inferential level of the control group and the experimental group

| | Experimental 1 Inferencial pre-test | | Control 1 Inferencial pre-test | | Experimental 1 Inferencial Posttest | | Control 1 Inferencial Posttest | | Experimental 2 Inferencial Posttest | | Control 2 Inferencial Posttest | |
|----------------|--|-------|-----------------------------------|-------|--|-------|-----------------------------------|-------|--|-------|-----------------------------------|-------|
| | f | % | f | % | f | % | f | % | f | % | f | % |
| Achievement | 8 | 80,0 | 9 | 81,8 | 10 | 100,0 | 3 | 27,3 | 9 | 90,0 | 4 | 36,4 |
| No achievement | 2 | 20,0 | 2 | 18,2 | 0 | 0,0 | 8 | 72,7 | 1 | 10,0 | 7 | 63,6 |
| Total | 10 | 100,0 | 11 | 100,0 | 10 | 100,0 | 11 | 100,0 | 10 | 100,0 | 11 | 100,0 |

Table 3. Descriptive levels of the pre-test and post-test evaluative level of the control group and the experimental group

| | Experimental 1 Critical pre-test | | Control 1 Critical pre-test | | Experimental 1 Critical Posttest | | Control 1 Critical Posttest | | Experimental 2 Critical Posttest | | Control 2 Critical Posttest | |
|----------------|-------------------------------------|-------|--------------------------------|-------|-------------------------------------|-------|--------------------------------|-------|-------------------------------------|-------|--------------------------------|-------|
| | f | % | f | % | f | % | f | % | f | % | f | % |
| Achievement | 5 | 50,0 | 3 | 27,3 | 8 | 80,0 | 8 | 72,7 | 9 | 90,0 | 8 | 72,7 |
| No achievement | 5 | 50,0 | 8 | 72,7 | 2 | 20,0 | 3 | 27,3 | 1 | 10,0 | 3 | 27,3 |
| Total | 10 | 100,0 | 11 | 100,0 | 10 | 100,0 | 11 | 100,0 | 10 | 100,0 | 11 | 100,0 |

Table 4. Descriptive levels of the reading comprehension Pre-test and Posttest of the control group and the experimental group

| | Experimental 1 Pre-test Reading Comprehension | | Control 1 Pre-test Reading Comprehension | | Experimental 1 Posttest Reading Comprehension | | Control 1 Posttest Reading Comprehension | | Experimental 2 Posttest Reading Comprehension | | Control 1 Posttest Reading Comprehension | |
|----------------|---|-------|--|-------|---|-------|--|-------|---|-------|--|-------|
| | f | % | f | % | f | % | f | % | f | % | f | % |
| Achievement | 5 | 45,5 | 1 | 9,1 | 10 | 90,9 | 3 | 27,3 | 10 | 90,9 | 4 | 36,4 |
| No achievement | 5 | 45,5 | 10 | 90,9 | 1 | 9,1 | 8 | 72,7 | 1 | 9,1 | 7 | 63,6 |
| Total | 10 | 100,0 | 11 | 100,0 | 10 | 100,0 | 11 | 100,0 | 10 | 100,0 | 11 | 100,0 |

Table 5. Range of the results obtained with the application of the Posttest on the experimental and control groups

| | | | |
|---|----------------------|----|---------------|
| Posttest Reading comprehension level Experimental 1 - Control 1 - Experimental 2 - Control 2 | Research groups | N | Average range |
| | Experimental Group 1 | 10 | 33,35 |
| | Control Group 1 | 11 | 11,36 |
| | Experimental Group 2 | 10 | 29,65 |
| | Control Group 2 | 11 | 13,45 |
| | Total | 42 | |
| Posttest Literal Level Experimental 1 - Control 1 - Experimental 2 - Control 2 | Research groups | N | Average range |
| | Experimental Group 1 | 10 | 29,30 |
| | Control Group 1 | 11 | 14,23 |
| | Experimental Group 2 | 10 | 26,20 |
| | Control Group 2 | 11 | 17,41 |
| | Total | 42 | |
| Posttest Inferential Level Experimental 1 - Control 1 - Experimental 2 - Control 2 | Research groups | N | Average range |
| | Experimental Group 1 | 10 | 32,10 |
| | Control Group 1 | 11 | 11,68 |
| | Experimental Group 2 | 10 | 29,85 |
| | Control Group 2 | 11 | 14,09 |
| | Total | 42 | |
| Posttest Critical Level Experimental 1 - Control 1 - Experimental 2 - Control 2 | Research groups | N | Average range |
| | Experimental Group 1 | 10 | 28,95 |
| | Control Group 1 | 11 | 16,59 |
| | Experimental Group 2 | 10 | 24,40 |
| | Control Group 2 | 11 | 17,00 |
| | Total | 42 | |

Table 6. General and specific testing hypotheses

| Hypothesis | Vind*Vdep | Posttest reading comprehension level Experimental 1 - Control 1 Experimental 2 - Control 2 | | |
|-----------------------|--|--|----|-----------------|
| | | H de Kruskal-Wallis | gl | Asymptotic Sig. |
| General hypothesis | Teaching strategy *Reading comprehension | 26,380 | 3 | 0,000 |
| Specific hypothesis 1 | Teaching strategy *Reading comprehension literal level | 11,556 | 3 | 0,009 |
| Specific hypothesis 2 | Teaching strategy *Reading comprehension inferential level | 24,161 | 3 | ,000 |
| Specific hypothesis 3 | Teaching strategy *Reading comprehension critical level | 8,446 | 3 | ,038 |

shows that Experimental Group 1 obtained 29.30; Experimental Group 2, 26.20; Control Group 1, 14.23, and Control Group 2, 17.41; thus, it revealed that Experimental Group 1 had better average in comparison with the other groups, and the influence of the application of the program was confirmed. For inferential understanding Experimental Group 1 obtained 32.10 and Experimental Group 2, 29.85; Control Group 1 obtained 11.68, and Control Group 2, 14.09; so it was found that Experimental Group 1 had a better average compared to the other groups, as a result of the use of the program and its influence. Finally, the average ranges obtained on the critical level are 28.95 for Experimental Group 1; 24.40 for Experimental Group 2; Control

Group 1, 16.59, and Control Group 2, 17.00; so, the influence of the program used was confirmed.

In table 6, related to the general hypothesis test, statistical value H was observed to be 26,380 for 3 degrees of freedom. It can also be observed in the Asymptotic Sig. row, which displays the value 0,000, that the result was lower than α , thus confirming the alternative hypothesis where the teaching strategies exert an influence on reading comprehension.

On the other hand, the values of the specific hypothesis 1 reveal that statistical value H was 11,556 for 3 degrees of freedom and the

value of the row asymptotic significance was 0,009, in which the result was lower than α , thus corroborating the alternative hypothesis where didactic strategies impact on the literal comprehension of texts.

In reference to the specific hypothesis 2, statistical value H was 24,161 for 3 degrees of freedom, and the value of Asymptotic Sig. was 0,000; the result was lower than α , corroborating the alternative hypothesis where the didactic strategies evidence their influence on the inferential comprehension of texts.

Likewise, in the specific hypothesis 3, it can be observed that statistical value H was 8,446 for 3 degrees of freedom, and the value of the row Asymptotic Sig. was 0,038, in which the result was lower than α , which ratifies the alternative hypothesis where the didactic strategies have an influence on the evaluative comprehension.

The research consisted of a set of activities around teaching strategies for basic education students. Positive results are evident with a clear influence on student learning. Consequently, it was found that the strategies used were efficient and effective in optimizing the literal, inferential and evaluative understanding of continuous and discontinuous texts, converging with the studies of Manzanal and Baridon (2019), who implemented strategies to optimize the reading process in a dynamic and interactive way.

As the strategies are decision-making processes, the results are in function of the relevant and timely application. Thus, it is evident in each of the alternative hypotheses where the Asymptotic Sig. presents the value of 0.000; the result is less than α , which confirms the influence of the strategies on text comprehension. This is in line with the studies carried out by Acurio and Núñez (2019), whose creative and innovative didactic strategies had an impact on academic performance and learning.

The dynamics used allowed for individual and cooperative work by students in the different didactic sequences. The results are consistent with the studies carried out by Medina and Nagamine (2019) in the application of creative and innovative tools to optimize text comprehension and train autonomous and creative students reflective of their own learning process in different contexts.

According to the results of the alternative hypotheses, the success of the proposal used for the investigation of the previous knowledge as well as the understanding and systematization of the information on the students is evident. Therefore, improvement was revealed in the literal, inferential and evaluative understanding, with strategies always oriented to the conscious, critical and reflexive learning using physical material and involving the use of ICT. In this case, it is in line with that proposed by Barreyro, Injoque-Ricle, Formoso and Burin (2019), and Cabero, Piñero and Reyes (2018), whose results acquire significance when oriented towards the development of competencies.

The applications of the strategies were oriented to the development of student competencies in a dynamic, creative manner. This motivated the personal, cooperative and interactive learning of students from an autonomous, critical and flexible perspective. In addition, students were able to make decisions based on their needs and interests and on their learning process aimed at achieving meaningful learning.

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