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Article

# C.L. module in school performance in the area of mathematics in secondary school students of an educational institution in Peru, 2015.

**C.L. module in school performance in the area of mathematics in secondary school students of an educational institution in Peru, 2015**

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## Abstract

The main purpose of this research is to determine the influence of the C.L. module on school performance in the area of mathematics in secondary school students of I.E. N° 1212 "Grumete Medina" - Ate, and I.E. N° 1227 "Indira Gandhi" - Ate. The study sample consisted of 64 secondary school students from the aforementioned educational institutions, of which 34 are female and 30 are male. For the reelection of data, a test was used which was validated through expert judgments; for reliability, a pilot test was applied with the results of Richarson's KR-20, which yielded a high reliability. The results obtained show that there is a significant influence of the C.L. module on school performance in the area of mathematics with a value of $p = 0.000 < 0.05$; therefore, the null hypothesis was rejected and the alternative hypothesis was accepted.

**Key words:** Reading comprehension, C.L. Module, school performance, students, educational institution.

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## Abstract

La presente investigación tiene como propósito principal determinar la influencia del módulo C. L. de rendimiento escolar en el área de matemáticas en los estudiantes de bachillerato de la Escuela No. 1212 "Grumete Medina" - Ate, y de la Escuela No. 1227 "Indira Gandhi" - Ate. La muestra de estudio estuvo conformada por 64 estudiantes de las instituciones educativas de nivel secundario antes mencionadas, de los cuales 34 son mujeres y 30 hombres, para la reelección de los datos se utilizó la prueba que fue validada a través del juicio de expertos para la confiabilidad una prueba piloto con los resultados aplicó el KR-20 Richarson donde arrojo una alta confiabilidad. Los resultados muestran que existe influencia significativa del módulo C. L. en el rendimiento escolar en el área de matemáticas al obtener un valor de $p = 0,000 < 0,05$; por lo que se rechaza la hipótesis nula y se acepta la hipótesis alternativa.

**Palabras clave:** Comprensión lectora, módulo C.L, rendimiento escolar, alumnos, institución educativa.

## Introduction

For this work we inquired about reading comprehension in school performance in the area of mathematics in high school students and found that Mesía (2013) in his research entitled: Influencia del método experimental en el rendimiento académico de los estudiantes de Didáctica de la Química I- II y Didáctica de la Biología I - II de la Facultad de Educación de la Universidad Nacional Mayor de San Marcos durante el año 2012, considered the problematic that exists in the teaching-learning that are developed through traditional expository methods and that does not emphasize the experimental method for the reinforcement of student learning. The results found were: in the group where no teaching method was applied, the academic performance of the students was low, with an average of 10.12; in the group where only the traditional method was applied, the academic performance was low, but reaching an average of 12.33; on the other hand, in the group where the didactic experimental method was applied, the students significantly raised their academic performance compared to the students who learned

only with the traditional method, having an average of 12.50 and a lower dispersion, an increase that was affirmed with 1% probability of error, as demonstrated by the analysis of variance performed; it should be noted that the group of students to which the didactic experimental method and the traditional pedagogical method were applied had an average of 14.75.

Oré (2012) in his research studied the existence of a significant relationship between reading comprehension scores, study habits and academic performance grades. The sample consisted of 144 first-year university students from the 2010-II semester, morning shift. A reading comprehension questionnaire and a study habits inventory were applied. Academic performance was determined through the students' grades, obtained from the university's academic records office. Some results found were: with respect to reading comprehension, 31.5% of the students were in a dependent-difficulty level, 43.5% in the dependent-bad level and 23.6% in the difficulty-worst level; with respect to academic performance, 41% of the students were in the regular level (grades between 11 and 13), while 38.Considering the results found, it was established that there is a multiple correlation of R=0.86, which indicated a very strong correlation, concluding that at least two of the variables studied had a strong relationship. It should be noted that the relationship between reading comprehension and academic performance was .925, that is, a significant relationship was found between these two variables.
Vallejos (2007) in his research work: *Reading comprehension and school performance in sixth grade students in the district of Pueblo Libre*, related reading comprehension and school performance, the sample was obtained from a total population of 745 sixth grade students, which was distributed in 7 schools in the district of Pueblo Libre. The ACL instrument was applied. Some conclusions were: the average of the students is good in the basic areas. The highest average was in the area of comprehensive communication and the lowest in the area of logical mathematics. Thirty percent of students reached a normal level of comprehension, 26% moderately low, 19% low, 7.6% very low, 14% moderately high and only 0.3% reached a high level.

Likewise, the following research works are considered as international antecedents: Ramos (2013) in his research work: *Reading comprehension as a basic tool in the teaching of natural sciences*, proposed the design and implementation of a strategy based on the posing of questions as a central axis to improve levels of reading comprehension of scientific texts in the area of natural sciences of eighth grade students of the Débora Arango Pérez Educational Institution. Once determined the degree of performance in reading comprehension in the different levels (literal, inferential and critical) of the students of grade 8-3 (32 in total) of this educational institution. Some results obtained when performing the comparative analysis between the pretest and posttest were: the level of comprehension of the students at the beginning of the study ranged between low and medium performance (according to the range established for the study) and at the end, for the three levels of comprehension, it ranged between high performance values, given that the highest percentage of students who were in that range were 48.9%, 48.9% and 56.3% for the literal, inferential and critical levels respectively; which showed a positive contribution in the reading comprehension of the students in the study. In addition, an increase in the number of correct answers was found at the end of the study: 23.1% for literal competence, 22.1% for inferential competence and 18.9% for critical competence. Likewise, the change of some values, for example, in the literal level decreased from 40.6% to 21.9% of students in the medium level and increased from 18.8% to 46.9% in the high level; while for the inferential level, in the low medium it went from 37.5% to 12.5%, in medium from 25% to 28.1% and high from 9.4% to 46.8%; and in the critical level it went from 28.1% to 9.4 for low, from 37.5% to 25% in medium low and from 31.3% to 56.3% in the high level. Among his conclusions, he highlighted the positive contribution of the strategies in the reading comprehension of the students under study, given that the percentages decreased in the low levels and increased in the higher levels.

Salas (2012) in his research: *El desarrollo de la comprensión lectora en los estudiantes del tercer semestre del nivel medio superior de la Universidad Autónoma de Nuevo León*, had two objectives, on the one hand, to know and describe the achievements and difficulties of students in relation to reading comprehension and on the other hand,

to propose actions and strategies based on the theoretical sources consulted, in order to promote the development of reading comprehension in students. The research was conducted with students who took the literature learning unit during the third semester, in the school period from August to December 2010. The action research methodology and the qualitative method were used. Some of the instruments used for data collection were: participant observation, questionnaires and texts related to pre-instructional strategies (what and how the content is learned), co-instructional strategies (support during the teaching process) and post-instructional strategies (form in the student a synthetic and critical view of the material). Some of the results found were: 88% of students increased their ability to recognize the author's intention in the texts, 83% responded correctly to the inferences and connectors that were requested, while in the evaluative phase, a considerable increase could be observed as almost the entire student population answered correctly; in addition, 98% of the student population was able to extract concrete information from the reading and 100% recognized the use of non-verbal language in the text, the above by showing their ability to relate the illustration with the content of the reading. One of the conclusions reached is that in the process of reading comprehension at the high school level, it is necessary to work under an interactive model, strategies that promote and increase the process of reading comprehension in students.

Bravo (2010) in his research: *Los organizadores gráficos, su uso e influencia en el desarrollo del pensamiento sistémico de los estudiantes del décimo año de educación básica del Colegio Eloy Alfaro de Bahía de Caraquéz del Cantón Sucre, en el período lectivo 2007*, raised the need to apply new methodological strategies for the development of thinking, given that mental operations are necessary for the human being to manifest his knowledge; he took as a sample the students of the tenth year of basic education of the national school Eloy Alfaro del Cantón Sucre. In order to compare results, she divided the course into two groups A and B; with group A she worked in a normal way and with group B she applied the graphic organizers strategy. Some results found were: In group A, in the initial and final evaluation, there was a decrease from 14.3% to 9.52% in the superior category, from 23.8% to 14.3% in the weak

category, an increase from 28.6% to 33.3% in the normal category and from 33.3% to 42.9% in the inferior category was also observed. As for group B (quasi-experimental) progress was notable, in the excellent category (10-9) from 4.8% to 9.5% and in the superior category (8-7) from 14.3% to 19.1%; in the normal category (6-5) progress from 19% to 33.3%; in the weak category (4-3) from 9.5% to 38.1% and in the inferior category (2-1) students who at the beginning of the year were in this category moved to higher categories, therefore, it can be deduced that in this category success was 100%. One of its main conclusions was: the group to which the graphic organizers strategy was applied in learning improved significantly in their academic performance.

The General Education Law No. 28044 considers education as the process of learning and teaching, which is carried out constantly throughout people's lives, contributing to the development of potentialities and integral formation of people. It is necessary to remember that education, in addition to acquiring knowledge, also means developing creative and innovative skills, with values; the importance of this lies in the formation and integral development of responsible and caring students, who are concerned not only for their personal wellbeing but also for the wellbeing of others.

Furthermore, the purpose of basic education is: "to favor the integral development of the student, the unfolding of his or her potential and the development of capacities, knowledge, attitudes and fundamental values that the person must possess in order to act adequately and effectively in the different areas of society" (General Education Law No. 28044, Art.29). All this allows a comprehensive development of the student, providing him/her with the necessary tools so that he/she can develop adequately and assertively with his/her environment, becoming an agent of transformation for the benefit of society and national development.

For this to be achieved, it is necessary that students develop some characteristics that are supported under the constructivist model, such as: "students learn to think, to enrich themselves internally with structures, schemes and internal mental operations that allow them to think, solve, and successfully decide academic and experiential situations" (Flores, 2005, p. 192). This allows students to really

create their own knowledge by experimenting with situations, making critical and value judgments, analyzing their environment, in order to apply what they have learned not only in the academic environment but also in their daily activities.

In addition, the goals of Peruvian education are: to train people who can relate assertively with their environment, developing capacities and skills that allow them to face social and knowledge changes; another goal is to contribute to the formation of an enterprising society that can overcome poverty and promote integration.

The Educational Institutions: N°1212 "Grumete Medina" and N°1227 "Indira Ghandi", are related to Law N°28044 developing a diversified curriculum, with quality and equity.

The National Curriculum Design for Regular Basic Education (2015) considers that the objective of the communication area in secondary education is to strengthen students' communication skills to facilitate their interrelation with the environment. In this sense, it fosters the development of the following competencies: understanding oral texts, expressing oneself orally, understanding written texts, producing written texts and interacting with literary expressions. These skills can be used in different fields, whether academic or scientific.

In our country, a few years ago, the Educational Emergency Program was implemented with the objective of developing a pedagogical proposal that involved communication, mathematical logic and values education competencies.

This pedagogical proposal considered that teachers would be responsible for promoting the development of communicative competencies in students by applying active strategies aimed at motivating students to read, understand, discuss different topics and create their own texts. It is necessary to take into account that, by practicing these strategies, not only communicative competencies are developed, but simultaneously students also develop their ability to build logical reasoning, perform mathematical calculations and put values into practice in their daily lives.

Nowadays, considering the globalization process in which we live, it is necessary an education that allows our students to acquire learning by developing their creativity, working in cooperative

teams, carrying out projects, in other strategies that contribute to improve school performance based on reading comprehension, logical-mathematical reasoning and practice of values.

According to the Peruvian Ministry of Education (2009), reading is the main learning tool for students because it is required to read different texts in order to have knowledge and culture. It is an interactive method, in which the reader elaborates the meaning of the text; the product of text comprehension depends on how the reader relates his or her knowledge to the text. In education, reading comprehension is linked to the achievement of learning, that is, the ability to: interpret, retain, organize and value what has been read; fundamental requirements in all learning.

The present research is necessary because of the importance of reading comprehension in the school performance of students in the area of mathematics. It is supported to the extent that the reasons for the search for information for the topic of study, and in the different forms of attitudes that are observed in managers, teachers and students, when it comes to innovating education in general. Also, the need to investigate our reality with the influence of reading comprehension and school performance in mathematics, requires the use of procedures and instruments that promote the improvement in the quality of our education; in addition, after having reviewed the literature corresponding to the research topic and given the lack of it, because there is only from the primary level, it is established that the topic is new so its achievements will contribute positively in the school performance in the area of mathematics of students at the secondary level.

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Investigating Mathematics by Fisher and Vince (2001) argued that the terms "investigation" and "problem" are sometimes used very loosely. In this case problems can have a specific goal: there is an obstacle or a series of obstacles that prevent that goal from being achieved immediately and the student to solve the problem must try a whole range of strategies, many of which involve an investigation. In effect research is a process that includes a series of discussions and practical work that can be used to solve problems.

Many investigations do not have a precise limit, but are open to a whole range of creative interpretations while others, such as

problems, are "closed" in the sense that they have a solution or a specific objective; however, the process followed to reach that objective can be open and once a solution is reached many other paths can be followed to expand it. Extending the investigation can lead to the raising of new questions and in each of its steps the student can actively intervene. For these reasons, the following objective was proposed: To determine the influence of the C.L. module on school performance in the area of mathematics in secondary school students of I.E. N° 1212 "Grumete Medina"-Ate and I.E. N°1227 "Indira Gandhi" - Ate. Likewise, the following hypothesis was put forward: The C.L. module has a significant influence on school performance in the area of mathematics in secondary school students of I.E. N° 1212 "Grumete Medina" - Ate and I.E. N° 1227 "Indira Gandhi" - Ate.

## Materials and methods

In the present research work, the experimental method was used since the independent variable (CL module) was manipulated to analyze the effects on the dependent variable (school performance), in a situation controlled by the researchers. In the present research, the quasi-experimental design was used. In addition, the pre-test - post-test and control group model was used, where each group was previously formed. The population is made up of secondary school students of the following educational institutions: N° 1212 "Grumete Medina" and N° 1227 "Indira Ghandi" of UGEL N°06 - Ate and we worked with an intentional non-probabilistic sample, being the students of the second grade of secondary school made up of 64 students of sections A and B of I.E. N° 1212 "Grumete Medina"- Ate, and sections A and B of I.E. N°1227 "Indira Ghandi"- Ate. Likewise, the instrument used was a questionnaire that was validated by expert judgment. The average valuation yielded an average of 83.3%, which means that the instrument can be applied as it is elaborated. The Kuder-Richardson Reliability Statistic (KR-20) showed that the reliability for the "Reading Comprehension and Mathematics" test is 0.877, which leads to the conclusion that this reliability is "Very High".

## Results

Frequency and percentage tables were used, which were processed using the SPSS Version 23 statistical package for Social Sciences. For the reliability of the instrument, the Kuder-Richardson scale (KR-20) was used because it is a dichotomous scale. The Kolmogorov-Smirnov test was used for the normality test because the sample was greater than 50.

Table 1:

*School performance in the area of mathematics*

| | GC Pre test | | GC Post test | | GE Pre test | | GE Post test | |
|---|---|---|---|---|---|---|---|---|
| | f | h | f | h | f | h | f | h |
| **At startup** | | 87,5% | | 6,3% | | 90,6% | 0 | 0,0% |
| **In process** | | 9,4% | | 90,6 | | 6,3% | 0 | 0,0% |
| **Expected accomplishment** | 1 | 3,1% | 1 | 3,1 | 1 | 3,1% | | 59,4% |
| **Outstanding achievement** | 0 | 0,0 | 0 | 0,0% | 0 | 0,0% | | 40,6% |
| **Total** | | 100,0% | | 100,0% | | 100,0 % | | 100,0% |

It is observed that in the pretest with respect to the control group, 87.5% of those evaluated are at the beginning level of school performance in the area of mathematics, while in the experimental group 9.4% are at the same level. In the posttest, it was observed that in the beginning level of school performance, 90.6% of the students in the control group did not reach this level, while in the experimental group, 40.6% were at the level of outstanding achievement.

Table 2:

*School performance in the area of mathematics in the dimension of mathematical situations.*

| | GC Pre test | | GC Post test | | GE Pre test | | GE Post test | |
|---|---|---|---|---|---|---|---|---|
| | f | h | f | h | f | h | f | h |
| **At startup** | | 18,8% | | 18,8% | | 12,5% | 0 | 0,0% |
| **In process** | | 62,5% | | 43,8% | | 81,3% | | |
| **Expected accomplishment** | | 18,8% | | 37,5% | 0 | 0% | 0 | 0% |
| **Outstanding achievement** | 0 | 0,0 | 0 | 0% | | 6,3% | | 75% |
| **Total** | | 100,0% | | 100,0% | | 100,0 % | | 100,0% |

With respect to the control group, in the pretest 62.5% reached a level in process, while in the posttest 43.8% reached the same level. In the pretest, 81.3% of the experimental group was at the in-process level, while 75% reached the outstanding achievement with respect to school performance in mathematics with respect to the dimension "mathematize situations".

Table 3:
*School performance in the area of mathematics in the dimension communicates and represents mathematical ideas.*

| | GC Pre test | | GC Post test | | GE Pre test | | GE Post test | |
|---|---|---|---|---|---|---|---|---|
| | f | h | f | h | f | h | f | h |
| **At startup** | | | | 9,4% | | 18,8% | 0 | 0% |
| **In process** | | 43,8% | | 34,4% | | 62,5% | 1 | 3,1% |
| **Expected accomplishment** | | 28,1% | | 40,6% | | 18,8% | | 43,8% |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Outstanding achievement** | 1 | 3,1% | 5 | 15,6% | 0 | 0% | | 53,1% |
| **Total** | | 100,0% | | 100,0% | | 100,0 % | | 100,0% |

With respect to the control group, in the pretest 43.8% reached a level in process, while in the posttest 40.6% reached the expected achievement level. In the pretest, 62.5% of the experimental group was at the in-process level, while 53.1% reached the expected achievement level with respect to school performance in mathematics in the dimension of communicates and represents mathematical situations.

Table 4:
*School performance in the area of mathematics in the dimension elaborates and uses strategies*

| | GC Pre test | | GC Post test | | GE Pre test | | GE Post test | |
|---|---|---|---|---|---|---|---|---|
| | f | h | f | h | f | h | f | h |
| **At startup** | | 37,5% | | 12,5% | | 37,5% | 0 | 0% |
| **In process** | | 53,1% | | 56,3% | | 59,4% | | 40,6% |
| **Expected accomplishment** | 0 | 0% | | 31,3% | 0 | 0% | 0 | 0% |
| **Outstanding achievement** | | 9,4% | 0 | 0% | 1 | 3,1% | | 59,4% |
| **Total** | | 100,0% | | 100,0% | | 100,0 % | | 100,0% |

With respect to the control group, in the pretest 53.1% reached a level in process, while in the posttest 56.3% reached the same level. In the pretest, 59.4% of the experimental group was at the level in process, while 59.4% reached the outstanding achievement with respect to school performance in mathematics with respect to the dimension "elaborate and use strategies".

Table 5:
*School performance in the area of mathematics in the dimension of reasoning and argument generating mathematical ideas.*

| | GC Pre test | | GC Post test | | GE Pre test | | GE Post test | |
|---|---|---|---|---|---|---|---|---|
| | f | h | F | h | F | H | f | h |
| **At startup** | | 18,8% | 1 | 3,1% | | 12,5% | 0 | 0% |
| **In process** | | 43,8% | | 18,8% | | 56,3% | 1 | 3,1% |
| **Expected accomplishment** | | 37,5% | | 56,3% | | 28,1% | | 50% |
| **Outstanding achievement** | 0 | 0% | | 21,9% | 1 | 3,1% | | 46,9% |
| **Total** | | 100,0% | | 100,0% | | 100,0 % | | 100,0% |

With respect to the control group, in the pretest 43.8% reached a level in process, while in the posttest 56.3% reached the expected achievement. In the pretest, 56.3% of the experimental group was at the in-process level, while 46.9% reached the expected achievement with respect to school performance in mathematics with respect to the dimension of reasoning and arguing by generating mathematical ideas.

**Discussion**

When processing the data, the influence of the C.L. Module on school performance in the area of mathematics in secondary education students of the educational institutions of the UGEL N° 06 - Ate Vitarte, 2015 was verified, in this regard Oré (2012) in his research on: *Reading comprehension, study habits and academic performance in first year students of a private university in Metropolitan Lima*, evidenced that 31.5% of students are in a dependent level of difficulty with respect to reading comprehension, besides evidencing a regular performance and finding a correlation of 0.925. Also Aliaga (2000) in his research entitled: *Relationship*

*between Reading Comprehension Levels and Knowledge of the participants of a Distance Teacher Training Program*, concludes that there is an association between reading comprehension scores and performance grades. In this research a low performance was evidenced in the pre-test, which was improved due to the application of the C.L. module based on reading comprehension, this is demonstrated by finding a value of $p=0.000 < 0.05$.

*On the* other hand, the influence of the C.L. module in the dimension of mathematical situations in school performance was evidenced, Vallejo (2007) in his study: *Reading comprehension and school performance in sixth grade students of the district of Pueblo Libre*, concludes that the lowest average was found in the area of logical mathematics. Also Mesía (2013) in his research entitled: *Influence of the experimental method in the academic performance of students of Didactics of Chemistry I- II and Didactics of Biology I - II of the Faculty of Education of the Universidad Nacional Mayor de San Marcos during the year 2012,* found that students significantly raised their academic performance after the application of the didactic experimental method, this was affirmed with 1% probability of error. In this research, in the pretest a low performance of the ability to mathematize situations was evidenced, for this reason the C.L. module was applied to the experimental group, resulting in a significant improvement of the ability to mathematize situations, this is demonstrated by finding a value of $p=0.001 < 0.05$; therefore, it coincides with the previously mentioned authors.

Likewise, it was demonstrated that the C.L. module significantly influences the dimension Communicates and represents mathematical ideas, Ramos (2013) in his research work: *Reading comprehension as a basic tool in the teaching of natural sciences*, evidenced that at the beginning of the study reading comprehension of inferential type was 9.4% at the end increased to 46.8%, demonstrating the positive contribution of strategies in reading comprehension. In addition, Salas (2012) in his research: *El desarrollo de la comprensión lectora en los estudiantes del tercer semestre del nivel medio superior de la Universidad Autónoma de Nuevo León*, found that after the application of strategies 98% of the students managed to extract information from the readings and 83%

answered correctly the inference questions, demonstrating that by promoting and increasing the reading comprehension process, through an interactive model, students respond correctly. In this research a low performance of the ability to communicate and represent mathematical ideas was evidenced in the pretest, for this reason the C.L. module was applied to the experimental group, resulting in a significant improvement of the ability to communicate and represent mathematical ideas, this is demonstrated by finding a value of $p=0.000 < 0.05$; therefore, it coincides with the previously mentioned authors.

It is also evident that the C.L. module significantly influences the dimension Elaborate and use strategies, Bravo (2010) in his research: *Los organizadores gráficos, su uso e influencia en el desarrollo del pensamiento sistémico de los estudiantes del décimo año de educación básica del Colegio Eloy Alfaro de Bahía de Caraquéz del Cantón Sucre, en el período lectivo 2007*, evidencio progresos notables, el 100% de los estudiantes que se encontraban en la categoría inferior al inicio del estudio pasaron a categorías superiores luego de aplicar la estrategias de organizadores gráficos, demostrando un mejoramiento significativo en el rendimiento académico. In turn, Salas (2012) in his research: *El desarrollo de la comprensión lectora en los estudiantes del tercer semestre del nivel medio superior de la Universidad Autónoma de Nuevo León*, found that after the application of strategies students increased the ability to recognize the author's intention (88%), extract information the readings (98%), demonstrating that by promoting and increasing the reading comprehension process, through interactive model, students improve their responses. It was evidenced in the pretest a low performance of the capacity Elaborate and use strategies, for this reason the C.L. module was applied to the experimental group, resulting in a significant improvement of the capacity Elaborate and use strategies, this is demonstrated by finding a value of $p=0.010 < 0.05$; therefore, it coincides with the previously mentioned authors.

Similarly, it was shown that the C.L. module has a significant influence on the dimension Reasons and argues by generating mathematical ideas. In this regard Cabanillas (2004) in his research referred to *Influence of direct teaching in the improvement of*

*reading comprehension of students of the faculty of educational sciences of the UNSCH*, where he argues that reading comprehension was at a low level (83.34%) but after performing the experimental treatment a significant difference was observed due to the "direct teaching strategy" used. In turn, Salas (2012) in his research: *El desarrollo de la comprensión lectora en los estudiantes del tercer semestre del nivel medio superior de la Universidad Autónoma de Nuevo León*, found that after the application of strategies, 100% of students correctly relate illustrations or graphics with the content, also students increased the ability to recognize the author's intention (88%), extract information readings (98%), demonstrating that by promoting and increasing the process of reading comprehension, through interactive models, students improve their responses. It was also evidenced in the pretest a low performance of the capacity Reason and argue generating mathematical ideas, for this reason the C.L. module was applied to the experimental group, resulting in a significant improvement of the capacity Reason and argue generating mathematical ideas, this is demonstrated by finding a value of $p=0.009 < 0.05$; therefore, it coincides with the previously mentioned authors.

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