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# **DEVELOPMENT OF READING** COMPREHENSION IN ENGLISH THROUGH METACOGNITIVE

# **READING STRATEGIES IN SIXTH GRADE LEARNERS AT INSTITUTION EDUCATIVA** JOSÉ MARÍA CÓRDOBA

## » Abstract

The aim of this study was to determine Metacognitive Reading Strategies contribution in English reading comprehension improvement with six grade students from an official institution. This is a quantitative study, and also it is descriptive-correlational and taking into account its nature is a cuasiexperiment. To collect the information a pre-test and a post-test, was applied. No parametric test were practiced such us Wilcoxon and U Mann-Whitney. After the analysis results, it can be drawn that metacognitive reading strategies produce positive results in the reading comprehension level in the studied group. It is expected with this research to contribute to the development of the reading comprehension in English and to improve this ability in the national test and for future students generation.

**Key words:** Metacognitive Strategies, quantitative study, correlational, cuasiexperiment, Wilcoxon test, U de Mann-Whitney test.

#### » Resumen

El objetivo de este estudio fue determinar la contribución de las estrategias Metacognitivas en el mejoramiento de la comprensión lectora de los estudiantes de sexto grado de una institución oficial, para lo cual se realizó un estudio cuantitativo de tipo descriptivo-correlacional. Y de naturaleza cuasiexperimental. Para la recolección de la información se aplicaron pre-test y post-test. Se aplicaron pruebas no paramétricas como Wilcoxon y U de Mann-Whitney. Según los resultados se pudo analizar que la aplicación de las estrategias metacognitivas produjo resultados positivos en el grupo intervenido. Se espera con esta investigación contribuir

al desarrollo de la habilidad de lectura en inglés y al mejoramiento de esta habilidad en los exámenes de estado y para futuras promociones de estudiantes.

Palabras clave: Estrategias Metacognitivas, estudio cuantitativo, correlacional, cuasiexperimental, prueba Wilcoxon, prueba U de Mann-Whitney.

## Introduction

Reading is actually one of the oldest and most complex man activities, from childhood until the death is in constant contact with this, many times with different intentions and interests, starting from the most common and spontaneous, it is said from reading any advertisements to a literary work. Today, reading is a multifaceted process, which requires the development of skills and strategies to learn and comprehend a text.

Also, reading in English is increasingly important place in the current context. Many societies and nations today are multilingual and its citizens are prepared to engage in more than one language. Reading skill in a foreign language especially in English today continue to spread out not only as a global language, but it is also a language that has impact on science, technology and advanced research "Many people in multilingual setting need to read in an L2 at reasonably high levels of proficiencies to achieve personal, occupational and professional goals" (Grabe and Stoller, 2002). In this sense, managing a second language allows people to high levels of personal performance, occupational and

professional.

Currently, students belonging to schools of our country have problem in reading comprehension. In fact Colombia is among the nations with percentages below the average according to international studies. Taking into account the latest results of the PIRLS (Progress in International Reading Literacy Study) and PISA (Programme for International Student Assessment), in 2011, it revealed that six out of ten primary students have difficulty understanding and interpreting complex texts and most people understand better one literary text rather than one informative.

In recent PISA test, which was conducted in 2009, Colombia scored 413 points lower than the overall average of OECD countries (Organization for Economic Cooperation and Development), similar to that of Thailand, Montenegro, Jordan and Trinidad and Tobago. Comparing the national results of others participating Latin American countries shows that this is lower than Chile, Mexico and Uruguay, with 30.6%, 40.1% and 41.9% respectively, similar to Brazil, with 49.6% and higher than Argentina, Panama and Peru, whose corresponding percentages are 51.6%, 64.8% and 65.3%. That is one of the lowest rates in the world, as evidenced in the following chart.

Habilidad Lectora - 2009			
42	Rusia	459	
43	Emiratos Árabes Unidos (Dubai)	459	
44	Chile	449	
45	Serbia	442	
46	Bulgaria	429	
47	Uruguay	426	
48	Mexico	425	

49	Rumania	424
50	Tailandia	421
51	Trinidad y Tobago	416
52	Colombia	413
53	Brasil	412
54	Montenegro	408
55	Jordania	405
6	Túnez	404
57	Indonesia	402
58	Argentina	398
59	Kazajistán	390
60	Albania	385
61	Catar	372
62	Panamá	371
63	Perú	370
64	Azerbaiyán	362
65	Kirguistán	314

Average reading in countries and regions participating in PISA 2009. Taken from: Pisa 2009. Programme for International Student Assessment, OECD, REPORT SPANISH. Madrid 2010

At the national level, taking into account the analysis test result in 2011, in the English component, could be found that 22 of every 100 students were at levels B1 and B+, which are those that manage to communicate effectively. The 17% was at A2 level, where students can understand sentences and frequently use expressions related to their immediate surroundings and communicate simple performance. The 32% was at A1 level, which they understand and use simple sentences in a simple way. The rest 29% did not reach the level A1. It can be inferred that most of the students are at level A1.

These results are similar to the ones detected in Jose Maria Cordoba School, where most students are proof of that deficiency. In the national tests result over the last four years, it said, 2009, 2010, 2011 and 2012, most of the students are located in the A- level, below the level proposed by the Ministry of Education, for our country at the school level. The following table shows the percentage obtained by the students according to the levels in the last four years. It can be analyzed that the test results have gradually improved over time, nevertheless, most of the students remain at level A.

Porcentaje de Estudiantes en cada nivel de Inglés				
	Perio- do 2009-2	Perio- do 2010-2	Perio- do 2011-2	Perio- do 2012-2
Nivel	Porcen- taje	Porcen- taje	Porcen- taje	Porcen- taje
A-	62,55	51,42	45,28	38,78
Al	33,64	41,14	42,45	45,24
A2	2,36	5,71	11,79	12,54
Bi	142	1,71	0,47	3,04
B+	0,00	0,00	0,00	0,38

National test results 2009, 2010, 2011, and 2012. Jose María Cordoba School. Taken from: http://www.icfesinteractivo. gov.co/result ecaes/sniee ind resul 2009, 2010, 2011, 2012.htm

Therefore, it is necessary to find solutions to change this educational reality, as a consequence, it is planned an intervention research that eventually would help to improve the teaching / learning English condition, especially reading skill development taking note that most of the national and international assessment tests include the appreciation of this foreign language ability in lengthy paragraphs. According to Phakity (2006) "Reading in a second language is complex, dynamic and multi-dimensional" which confirms that the second language reading process is multifaceted, active and has several dimensions.

Taking into account, Burón (1994) assertions "...Aprendizaje significa no sólo adquirir conocimientos sino que incluye también aprender a buscar los medios que conducen a la solución de los problemas; seleccionar información, elegir medios y vías, destacar hipótesis, ordenar y relacionar datos, etc. Este acercamiento al aprendizaje supone dar un giro en la enseñanza, pues exigiría enseñar no solo contenidos o datos, sino estrategias para aprenderlos y usarlos". In this sense it can be affirmed that using metacognitive strategies could contribute to overcome this difficulty. Considering the last arguments, it was carried out a research, with the aim of improving Reading English comprehension process using Metacognitive Reading Strategies.

In the same line, O'Malley and Chamot (1990), which state that "students without metacognitive approaches are essentially learners without direction or opportunity to plan their learning, monitor their progress, or review their accomplishments and future learning directions", that it is said, students lacking metacognitive attitudes are basically without a planned path to guide their learning process.

In the same way, Vandergrift (2002) says that "Metacognitive strategies are crucial because they oversee, regulate, or direct the language learning task, and involve

thinking about the learning process" it said that metacognitive strategies are important because they administer, adjust and control the language learning activities, being aware about their learning process.

Consequently, metacognitive strategies would be essential tools to develop and implement an intervention taking into account the levels and times of reading through systematic monitoring of a series of organized steps, and carry out a plan to improve the English reading comprehension of sixth grade students at Jose Maria Cordoba School, considering that this institution is part of bilingualism project, therefore the development of this intervention could support and act as a model for other public institutions involved in this project. Starting this process formulating the following question:

How Metacognitive Strategies help to improve the English reading comprehension process in sixth grade students from the Jose Maria Cordoba School?

With the aim to improve the reading comprehension process in a foreign language, English, at José María Córdoba School, a research project is proposed, that eventually contribute to improve the teaching/learning English situation, especially in the development of the English reading comprehension ability, based on the fact that national e international test measures reading comprehension as one of the most important language skill. This project will implement Metacognitive Reading Strategies, in order to improve reading comprehension in English classes, and in this way observe and describe the effects that the application of these

strategies may produce in the reading comprehension process.

This is a quantitative study, a cuasiexperiment in its nature design, where two groups were selected: the control and the experimental group. The methodology carried out was the following: at the beginning it was applied a diagnostic test, that helps to make decision in what ability to work on, then, it was applied the pretest, related to the reading comprehension in English, in both groups, then it was applied an intervention research based on metacognitive reading strategies using in the reading comprehension process, just in the "experimental" group, finally, it was practiced a post test, in both group, which give the opportunity to compare and recognize the impact of Metacognitive Reading Strategies in the reading comprehension process in both groups.

To collect de information, it was used a questionnaire focus on the reading comprehension ability in English, the instrument has 24 close questions and was validated taking into account the literature review, the experts' judgment, and the dependent variable operationalization. In accordance with Hernández, Fernández & Baptista (2010) who declare "los análisis cuantitativos se interpretan a la luz de las predicciones iníciales (hipótesis) y de estudios previos (teoría)" (p. 4). Moreover, a piloting activity was developed. In the same way, to verify the instrument reliability, the kuder-Richardson method was used.

The information obtained through the use of this instrument was analyzed and tabulated using the statistics program SPSS v 7, taking into account no parametric tests; such as

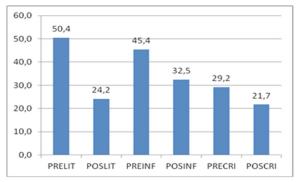
Wilcoxon rank and U of Mann-Whitney, applied before and after having applied the intervention using the Metacognitive Reading Strategies in the reading process in both groups.

Following the second objective, another instrument was used in the project; it was a validated test by the Oklahoma University, Metacognitive Awareness of Reading Strategy Inventory (MARSI). The results of this instrument were analyzed, taking into account the instruments instructions.

# **Results Accomplished**

Having explained the problem statement and the purpose of the research study, it is need to explain the results obtained once this intervention was applied.

Three reading comprehension level in English were evaluated: literal, inferential and critical, each of them were valued with eight items in the instrument in both group in the pre-test and the post-test. The average obtained in the control group in the three levels were the next ones:



Pre-test and Post-test Results.
Control group

It can be observe that the three levels obtained better averages in the pre-test than in the post-test, where the averages were lower, maybe because lack of practice and motivation of the group to the reading ability. In this group the post-test was applied without students know metacognitive reading strategies, it is meant, this group did not have contact with the intervention research.

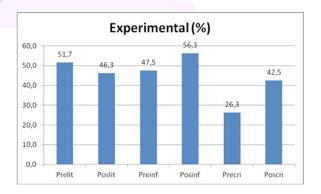
Observing the graphic, It can be analyzed that in the first test (pre-test) students were in the literal level. Then in the last test (post-test) students shown that they were in the inferential level.

Applying no parametric test, Wilcoxon test to determine if there is a significant change in the control group before and after a period of time when the test was applied again (Post-test) the result was:

Nivel	Probabili- dad (Pr)	Rango medio PRE	Rango Medio POS
LITERAL	0.000**	14.55	4.88
INFEREN- CIAL	0.007**	13.74	10.67
CRITICO	0.022*	13.96	7.19

Wilcoxon test result. Control group Indicating in each level that there are significant differences in the two applications, in favor to the first time.

Considering the experimental group the results were the following:



Pre-test and Post-test Results.

Experimental group

It can be observe that the inferential and the critical level obtained better results after the intervention development, where the averages were the highest. This significant change in the reading comprehension improvement, maybe was possible, because of the drill made during the intervention, and the frequently practice that happened on it, during the established period of time, doing different kinds of reading using the reading level; literal, inferential and critical. This could easily show that the experimental stimulus could give a significant change in the student reading process.

It can be analyzed that in the first test (pre-test) students were in the literal level. Then in the last test (post-test) students shown that they were in the inferential level, showing meaningful results taking into account the inferential and the critical level based on the number of the correct answers.

Applying no parametric test, Wilcoxon, to determine if there is a significant change in the experimental group before (pre-test) and after a period of time, when the test was applied (post-test) the result was:

Nivel	Probabili- dad (Pr)	Rango medio PRE	Rango Medio POS
LITERAL	0.342 NS	12.2	13
Inferen- cial	0.031*	9.14	17.34
Critico	0.002**	10.4	13.65

\*=Pr<0.05

\*\*=Pr<0.01

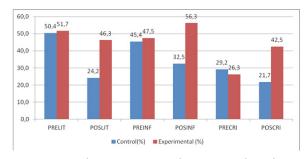
NS= Pr>0.05

Wilcoxon test result. Experimental group

Indicating in each level that there are significant differences in the two tests pretest and post-test, being in favor of the posttest in the inferential and the critical level. Making comparisons between the control and the experimental group in the pre-test and the post-test, the following results were obtained, taking into account the average for correct answer in each level.

	Control (%)	Experi- mental (%)	DIF (%)
PRELIT	50,4	51,7	1,3
POSLIT	24,2	46,3	22,1
PREINF	45,4	47,5	2,1
POSINF	32,5	56,3	23,8
PRECRI	29,2	26,3	-3,0
POSCRI	21,7	42,5	20,8

Pre and post test results. Control and experimental group



Pre and post test results. Control and experimental group

Observing the average in each level, it can be noticed that the experimental group was better almost in all levels, rather than the Control group in both the pre-test and the post-test except in the critical level in the pre-test, which did not beat the average. Nevertheless, this level in the post-test, it is meant after applying the intervention, it showed a significant development in the reading English comprehension.

Making no parametric test in independent groups, U of Mann Whitney, the found results were:

Nivel	Proba- lidad (Pr) PRE	Proba- lidad (Pr) POS	Rango medio PRE	Rango Medio POS
Literal	0.822NS	0.000 **	EXP=31 Con- trol=30	EXP=39.6
Infe- ren- cial	0.839NS	0.000**	EXP= 30.95	17.34
Criti- co	0.327NS	0.000**	EXP= 28.45	13.65

U of Mann Whitney test result. Control and Experimental group

Indicating with these probabilities that happened a positive change in each level after having made the intervention. Noticing this in the high value in the medium ranks in the post-test.

Therefore, taking into account the results of both internal tests (Wilcoxon) and external (U Mann Witney) and according to the third objective, that consist on evaluate metacognitive strategies effectiveness applied in the reading comprehension process in sixth grade students and after treatment implementation, it can be

affirmed that effect produced by the intervention, showed that it causes a relevant and meaningful change in the English reading comprehension ability in sixth grades students in the experimental group, after having applied the English reading comprehension treatment using metacognitive reading strategies, based on statistic tests performed and graphed.

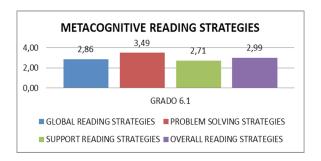
It can be simply appreciate that the application of the research intervention using reading comprehension and Metacognitive Strategies gave significant and positive results in the students reading comprehension, provide them with basic tools to improve reading comprehension, and became them in more efficient readers in the second language. In this way, obtain better academic results in reading English comprehension, looking for being competent in a plurilinguistic community.

On the other hands, before applying this pre-test, another instrument was practiced related to Metacognitive reading Strategies, (MARSI) according to the second objective of this research, which intends to find out what metacognitive metacognitive Strategies, facilitate the English Reading comprehension process in sixth three students. Then, use these strategies in the intervention to motivate students during this process following the student's interest and likes.

Considering the metacognitive reading Strategies test (MARSI) results, the scores obtained for each strategy and the average that the instrument indicates for examining Metacognitive Strategies use, it could analyzed that:

In the control group (6-1) the strategy

that students use most when reading is Problem-Solving Strategies, which score is 3,4% according to the key to interpret the instrument is a medium level, it means that they sometimes use a strategy when face difficulties in the reading or when it becomes hard. Referring to the use of the Metacognitive Reading Strategies in general, the group obtained a score about 2,9% taking into account this average the instrument key indicates that they are placed in the medium level. It means that they occasionally use Metacognitive Reading Strategies meanwhile they make the reading comprehension process.



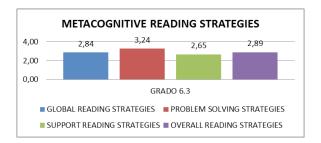
#### key to averages:

3,5 or higher = High 2,5-3,4 = Medium 2,4 or lower = Low

(MARSI) test result. Control group

In the experimental group (6-3), the strategy that students use most is Problem-Solving Strategies, with a score of 3,2% taking into account the instrument scoring scale, this group is in medium level, similar to the control group, it can be analyzed, that most of the students try to find solutions when the reading process is demanding. Considering the use of the Metacognitive Reading Strategies results, in general, the average achieved was 2,8%, according to the established key to classify the score, it indicates that students have a medium level

in the use of the Metacognitive Reading Strategies when reading.



#### Key to averages:

3,5 or higher = High 2,5-3,4 = Medium 2,4 or lower = Low

(MARSI) test result. Experimental group

It can be analyzed that in both groups, the strategy most used by the students is Problem-Solving Strategy that corresponds to a medium level and concerning to the general use of the Metacognitive Reading Strategies, it can be affirmed that both groups are in medium level too, taking into account the scoring scale of the instrument. It can be considered that the difference between the averages in the two groups persisted with low averages, nevertheless is not significant.

It is important to mention that, this first instrument, was applied before students were aware of using Metacognitive Reading Strategies in the classroom, it means that this instrument showed what Metacognitive Reading Strategies currently pupils are using unconsciously while reading, It is mean, without any explanation and drill exercises about Metacognitive Reading Strategies previously

# Additional Comments:

Considering the specific objectives and starting with the first which emphasizes on determine the reading comprehension level that have sixth graders. It can be said that during the development of the pre-test, which taking into account the results found in a first time, that is, before having applied the intervention, it is observed that students of both groups (control and experimental) were in the literal level with a percentage of 50.4% and 51.7% respectively.

After implementing this proposed intervention and having applied the posttest, it can be analyzed according to the results, that both groups, experimental and control groups passed from the literal to inferential level, with percentages of 56.3% and 32.5% respectively. It can be said that, the experimental group had a significant improvement in the critical level, considering the posttest results in relation to the pre-test which in the first test (pre-test) showed a percentage of 26, 3% and during application of the last test (post-test) found a rate of 42.5%, indicating that students not only passed from literal to inferential level, but also achieved a noticeable improvement in the performance in the critical level.

Related to the control group, during the post-test results analysis. It can be affirmed that in each level was evident the poor development of the students. It is important to mention that this group was not exposed to the treatment, neither any stimulus to improve reading comprehension in English.

On the other hand and in order to develop the second objective, which is to establish and develop metacognitive reading strategies that facilitate reading comprehension of sixth grade students and after metacognitive instrument application (MARSI) Matacognitive Awareness Reading Strategies Inventory, the results suggest that the metacognitive reading strategy that students used most was problem-solving strategies with a percentage of 3,49 % in the control group and 3,24% in the experimental group, follow by the Global Strategies with 2,86 % and 2,84% in the control group and the experimental severally, and finally the Support Strategies with a percentage of 2,71% in the control group and in the experimental group.

Following the third specific objective, which refers to assess the effects that metacognitive reading strategies produce in reading comprehension of sixth grade students, it can be said that the implementation and enforcement of the proposed intervention had a positive impact on the English reading comprehension process. For that reason, It being accepted the Alternal hypothesis, which comes in advance of the research question, and considers that the use of meta-cognitive strategies improves significantly reading performance of students in grade sixth three. Based on the improvement that this group demonstrates in the inferential and critical level. Moreover, taking into account the analysis of the results of instruments used (pre-test / post-test) and the types of tests developed, it is said, Wilcoxon and the U Mann Whitney tests, which shows clearly the students improvement of reading comprehension in English using metacognitive reading strategies.

These results indicate that there was a positive change in inferential and critical level after completing the intervention, as follows, during the pretest they obtained a percentage of 47.5% passing to 56.3%, that is the highest percentage during the application of both tests (pre-test and post-test) and in the critical level passing form 26.3% to 42.5%, noting this in the high value in the middle ranks in the post-test. (see chart U Mann Whitney test result, in the results).

It can be mentioned, that using metacognitive Reading strategies students not only improved reading comprehension in English, demonstrated in the statistic tests, but they passed from the literal level towards the inferential improving progressively the critical level, that showed to be the lowest level, taking into account the percentages.

It is therefore important to consider the use of metacognitive reading strategies inside the classroom in regular classes, which become useful and effective tools that facilitate the process of reading comprehension in English, and thus contribute to the improvement in the student level in this subject.

It would be advisable to develop and monitor these strategies in other degrees from the same institution, in order to improve reading comprehension in English and overcome the difficulties previously detected in this ability in this institution.

Further, it is suggested for future research, analyze the effects of Metacognitives Strategies not only in the reading process, but also in other abilities such as vocabulary and grammar, which directly favor English reading comprehension.

Moreover, It is recommended to continue implementing this intervention in other institutions and in other grades, especially those involved in the bilingualism project, in order to observe and analyze the impact of metacognitive Strategies in different contexts and in other subjects, using interdisciplinarity.

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