Sociometacognitive Program for the Improvement of Critical Reading in Secondary Education

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Abstract

Critical reading competence is currently one of the biggest problems in Colombian Education. In this sense, the results of a research that determined the impact of a program of sociometacognitive strategies are presented. The research took a mixed approach with action research and pre-experimental research. A working study group was created to determine the characteristics of the pedagogical strategy and entry and exit tests were applied that allowed comparing the performance levels of students in critical reading before and after the intervention. The results show that the teaching of critical reading from the sociometacognitive perspective contributes to strengthen the competences to identify the local contents of the text, establish a relationship between the parties to account for the overall content, as well as reflecting on a text and evaluating its content. In this way, the perspective favors the understanding of micro, macro and textual superstructures.

Keywords: *reading instruction, sociometacognitive approach, action research.*

Introduction

Reading competence is defined as the "Ability of an individual to understand, use, reflect and interact with written texts to achieve their goals, develop their knowledge and potential and participate in society" (Organization for Economic Cooperation and Development [OECD], 2017, p. 19), and represents a challenge for Latin American education systems. In this region, students only reached, on average, level two of the six proficiency levels assessed in the three-year PISA 2018 test (Ministry of Education and Vocational Training, 2019). This implies that, although students can identify the main ideas of a text and find information presented explicitly (level 2), they have difficulties when it comes to understanding long texts, their abstract concepts and the distinction between facts and opinions based on implicit clues of the text or the sources of information (levels 5 and 6). Under this scenario, Colombia has a great challenge, since it obtained results below the international average in reading competence (OECD, 2019) and only 1% of the students evaluated were located in levels five and six.

This represents a problem for Latin America and, specifically, for Colombia; since it is expected that elementary and secondary education students acquire the skills to critically understand the texts they read, which includes identifying their explicit information, understanding the relationships of meaning and form that occur between their parts to

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account for the global content, and reflect on the text, in addition to evaluating its content (Colombian Institute for the Evaluation of Education [ICFES], 2016)). These competencies prepare them to interact democratically in various social contexts according to the personal, academic, work and civic goals of each individual.

As a result of the conditions described, different researchers have proposed strategies for teaching and learning reading competence or critical reading, as it is called in Colombia. Among these, narrative texts have been used to strengthen critical reading (Peña, 2018; Galindo and Martinez, 2022; León, 2022), digital tools such as webquests or digital games have been developed in order to streamline didactic processes to strengthen the level of critical reading (Ríos and Ruiz, 2022; Rojas, 2022), and instructional strategies have been designed with the purpose of improving these competencies (Terán, 2017; Miranda, 2022). These investigations have demonstrated their impact on promoting interest in reading, this being one of the commitments of education, because it is not only about developing reading competence, but:

(...) In addition, commitment or interest in reading. In this context, commitment involves the motivation to read and encompasses a set of affective and behavioral characteristics that include interest in reading and the pleasure of reading, a sense of control over what is read, involvement in the social dimension of reading, and different and frequent reading practices. (OECD, 2017, p. 36)

On the other hand, research has shown its influence in strengthening the literal and inferential understanding of texts, especially in lexical and macrostructural recovery inferences (Cisneros et al., 2010), as well as in the development of a critical capacity to make personal judgments about the content of texts.

However, in the design of strategies to improve the level of performance of students to reflect from a text and evaluate its content, the act of enunciation as a social fact is not addressed, which implies recognizing the traces of the communication and enunciation situation in the discourses (Martínez et al., 2004; Martinez, 2005, Martinez, 2013; Díaz and Morales, 2013). In this framework, aspects such as the actors of the discourse and their worldviews are not part of the strategies proposed. Therefore, this research values the contributions of the aforementioned for the development of local and global understanding of the text, and assumes the need to delve into a discursive perspective that allows understanding, reflecting and evaluating the content of the text. For this reason, it was proposed to determine the impact of a program of sociocognitive strategies on the level of critical reading performance of students of academic media.

Sociometacognitive perspective for teaching and learning critical reading

This research proposes that the teaching and learning of critical reading should be assumed from the integration of some interdisciplinary approaches that have proven effective in developing reading skills. First, the cognitive and metacognitive perspective (Solé, 2016; Baker and Brown, 1984) allows to develop processes of planning, supervision and evaluation of reading, in order to contribute to the formation of strategic readers, who have metacognitive knowledge to assume the tasks of reading, select relevant strategies according to these demands, control the comprehension of those who read, and evaluate the usefulness of the strategies applied in the development of reading texts. Secondly, the textual perspective contributes to the interpretation of the structures of the texts (micro, macro and superstructure), according to the approaches of Martínez (2005) and Van Dijk (2005). Thirdly, the discursive perspective seeks to develop in students the skills to identify the traces of the situation of communication and enunciation in the texts to allow the recognition of those responsible for the discourse, the theme and the social contract of speech established, in addition to the intentions conveyed in this and the worldviews that circulate in it (Martínez et al, 2004; Martinez, 2013). In this order of ideas, taking into account the three critical reading competencies established by the ICFES (2016) in Colombia, three perspectives for the progressive and inclusive

development of these competencies were enunciated, as can be seen in the following graph (see figure 1).

Figure 1 Critical reading skills

In this sense, for the development of the pedagogical proposal, from the proposal of Solé (2016), comprehension strategies were designed to be applied before, during and after reading. To this are added the tools that allow students to develop metacognitive knowledge of the person, the task and the strategy, because as established by Baker and Brown (1984), with the progressive development of this knowledge students are helped to move from hetero to self-regulation and to improve their metacognitive control of textual comprehension.

In addition to this metacognitive perspective, the work that can be developed from the application of the macro-rules proposed by Van Dijk (2005) to teach students to recognize the macrostructure of texts, as well as the analysis of the different types of modes of organization of texts (superstructures) (Martínez, 2005) was considered fundamental.

Finally, the contribution of discourse sciences was used for the training of critical readers in terms of the study of the situation of communication and enunciation of texts understood as social practices, proposed by Martínez et al. (2004) and Martínez (2013).

Methodology

To answer the research question, a mixed methodology was defined, since it was necessary to apply two studies. First, a quantitative preexperimental cohort study was carried out, which aimed to apply a test and posttest to a sample of 24 students. This study allowed to determine the statistically significant differences in the sample under study, before and after the application of a program of sociometacognitive strategies (independent variable) that sought to favor critical reading skills (dependent variable). Accordingly, the following hypotheses were formulated:

H1: the application of a sociometacognitive program improves critical reading skills in a sample of 24 students.

H0: the application of a sociometacognitive program does not significantly improve critical reading skills in a sample of 24 students.

The hypothesis test was performed with the Wilcoxon statistic (parametric test), since the data did not meet the assumption of normality and the sample was less than 30.

Secondly, a qualitative study was applied, which consisted of an interpretative analysis that was carried out during the implementation of the intervention program through

participant observations, which were recorded in the field diaries. Another characteristic of this study was the work of hermeneutic reflection that was done with the formation of a study and work group (GET), composed of 24 students of the tenth grade of a public educational institution in the city of Montería, teachers of the integrated areas, the methodological advisor and a research student of the Degree in Literature and Spanish Language of the University of Córdoba.

This allowed the creation of the PlanSuperEva intervention program, which was developed in five learning modules that were based on a sociometacognitive perspective of reading (Díaz and Morales, 2013) to address the development of skills on: strategies for planning, supervision and evaluation of reading (Solé, 1992; 1996); communication and enunciation situation (Martínez et al 2004; Martinez, 2013; Bakhtin, 1998); and the superstructure of expository and argumentative texts (Van Dijk, 1983). Each module is structured as follows: theoretical explanation, practical activity and evaluative workshop. Therefore, the following learning modules were designed: Module I. Planning strategies; Module II. Monitoring strategies; Module III. Evaluation strategies; Module IV. Discursive strategies; and Module V. Textual typology strategies.

Analysis of the results

The results of the quantitative study were obtained through the hypothesis test, which was done using the nonparametric Wilcoxon test. This is because the data did not meet the assumption of normality (Shapiro-Wilk test: $p < 0.05$) and the study was done with a related sample; that is, the same sample participated in both studies.

Descriptive statistics

Board 1

Pretest results

Level of critical reading	Frequency	Percentage	Valid percentage	Cumulative percentage
1	2	8,3	8,3	8,3
2	15	62,5	62,5	70,8
3	6	25,0	25,0	95,8
4	1	4,2	4,2	100,0
Total	24	100,0	100,0	

Board 2

Posttest results

Level of critical reading	Frequency	Percentage	Valid percentage	Cumulative percentage
2	1	4,2	4,2	4,2
3	8	33,3	33,3	37,5
4	15	62,5	62,5	100,0
Total	24	100,0	100,0	

As can be seen in Table 1, 70.8% of the data are in levels 1 and 2 of critical reading; while Table 2 indicates that 95.8 is at levels 3 and 4 of critical reading.

Hypothesis testing with Wilcoxon for related samples

Board 3

Paired sample statistics

	Stocking	No.	Standard deviation	Standard error mean
Pretest	2,25	24	,676	,138
Posttest	3,58	24	,584	,119

Board 4

Paired sample testing

	Paired differences							
				95% confidence interval of difference				
Stocking	Standard deviation	Standard error mean	Inferior	Superior	t	Gl	Sig. (bilateral)
Par 1 Pretest - Posttest	-1,333	,702	,143	-1,630	-1,037	-9,305	23	,000

Board 5

Wilcoxon Test Summary

Resumen de prueba de hipótesis

	Hipótesis nula	Prueba	Sig.	Decisión
1	La mediana de las diferencias entre PRETEST y POSTEST es igual a 0.	Prueba de rangos con signo de Wilcoxon para muestras relacionadas	,000	Rechazar la hipótesis nula.

Se muestran significaciones asintóticas. El nivel de significación es de ,05.

According to Wilcoxon's test, as p = 0 < 0.05, H0 was rejected and H1 was accepted; that is, the means between the pretest and posttest are significantly different. Thus, the difference of 1.33 on average between the pretest (2.25) and the posttest (3.58) was confirmed. Therefore, it was concluded that the PlanSuperEva program improves critical reading skills in grade 10 A students of the El Dorado Educational Institution (IE).

Description of results by competence and trait

Competence 1. Identifies and understands the local contents that make up a text.

Pretest results:

Board 6

Identifies and understands the local content that makes up a text

Features	Question No.	N.º students	Correct answers	% success rate	% of hits by traits
1. The student understands the meaning of the local elements that constitute a text.	3	24	10	42 %	52 %
	4	24	15	63 %	
2. The student identifies the events narrated explicitly in a text (literary, descriptive, cartoon or comic) and the characters involved (if any).	1	24	18	75 %	63 %
	2	24	12	50 %	
			Total	57 %	

Posttest results:

Board 7

Identifies and understands the local content that makes up a text

Trait	Question No.	N.º students	Correct answers	% success rate	% of hits by traits
1. The student understands the meaning of the local elements that constitute a text.	2	24	24	100 %	96 %
	3	24	22	92 %	
2. The student identifies the events narrated explicitly in a text (literary, descriptive, cartoon or comic) and the characters involved (if any).	9	24	23	96 %	96 %
			Total	**96 %**	

This indicates that, during the pretest phase, students obtained an overall average of 57% with respect to Competency 1, compared to 96% in the post-test phase. This translates into an increase in the success rate of 39%, which means that participants were able to strengthen the first level of reading, characterized by understanding each sentence and paragraph of the text, until they had an overview of all the local content that the text is presenting. However, within the features evaluated, it was observed that in trait 1, according to the results of the pretest, the students had difficulty giving meaning to the local elements that constitute the text. After the implementation of the PlanSuperEva program, this skill could be significantly strengthened. On the other hand, with respect to trait 2, it can be affirmed that the participants strengthened the ability to identify the events narrated explicitly regardless of the textual typology and understood the meaning of the words according to the context.

Competence 2. Understand how the parts of a text are articulated to give it a global meaning.

This competence is constituted by five traits, which allow to know if the students possess the skills described for said competence.

Pretest results:

Board 8

Understands how the parts of a text are articulated to give it a global meaning

Features	Question No.	N.º students	Correct answers	% success rate	% of hits by traits
1. The student understands the formal structure of a text and the function of its parts.	8	24	9	38 %	**38 %**
2. The student identifies and characterizes the different voices or situations present in a text.	9	24	11	46 %	**46 %**
3. The student understands the relationships between different parts or statements of a text.	10	24	6	25 %	**13 %**
	13	24	5	21 %	
4. The student identifies and characterizes the ideas or statements present in an informative text.	11	24	14	58 %	**58 %**
5. The student identifies the type of relationship between different elements of a text (discontinuous).	6	24	0	0 %	**10 %**
	7	24	5	21 %	
		Total		**30 %**	

Posttest results:

Board 9

Understands how the parts of a text are articulated to give it a global meaning

Rank	Question No.	N.º students	Correct answers	% of success	% of hits by traits
1. The student understands the formal structure of a text and the function of its parts.	1	24	20	83 %	90 %
	11	24	23	96 %	
2. The student identifies and characterizes the different voices or situations present in a text.	10	24	22	92 %	92 %
5. The student identifies the type of relationship between different elements of a text (discontinuous).	4	24	24	100 %	100 %
				Total	**93 %**

According to the information described in tables 8 and 9, in the pretest phase, participants obtained a 30% correct rate; that is, they had a low degree of recognition in the formal structure of the text, the relationships between different parts or statements and difficulty in identifying the textual typology. In the post-test phase, the success rate rose to 93%, which means that students understood the paratextual elements, determined the meaning according to the context, identified the voices inserted in the texts, and recognized the textual micro and macrostructure. Likewise, greater safety was evidenced in the participants, as well as precision in the answers and zero strikeouts. The participants assumed a critical stance in front of the texts read, they no longer only wrote "I agree because yes", "a phrase is nice"; Instead, they justified their answers and defended them.

In summary, the significant progress that the students had was appreciated, since they managed to understand how the elements that make up a writing are related in a global way, they understood the parts of a text taking into consideration the introduction, the presentation of arguments, the postulation of the central idea and those that support it and the conclusions; That is, what is traditionally known as: beginning, node and outcome, but with a high level of demand as befits this stage of reading.

Competence 3. Reflect from a text and evaluate its content.

In this competition, the ICFES (2018) proposed five features, but in the diagnostic workshop we worked from the second to the fifth. Table 10 details each trait and shows its respective percentage of success.

Pretest results:

Board 10

Reflect from a text and evaluate its content

Features	Question No.	N.º students	Correct answers	% success rate	% of hits by traits
2. The student establishes relationships between a text and other texts or statements.	14	24	1	4 %	4 %
3. The student recognizes evaluative contents present in a text.	12	24	11	46 %	46 %
4.The student recognizes the discursive strategies in a text.	15	24	9	38 %	38 %
5. The student adequately	5	24	9	38 %	46 %

contextualizes a text or the information contained in it.	16	24	13	54 %
			Total	**36 %**

Posttest results:

Board 11

Reflect from a text and evaluate its content

Rank	Question No.	N.º students	Correct answers	% success rate	% of hits by traits
2. The student establishes the validity and implications of a statement of a text (argumentative or expository).	5	24	24	100 %	**92 %**
	12	24	20	83 %	
3. The student recognizes evaluative contents present in a text.	6	24	22	92 %	**88 %**
	7	24	20	83 %	
4. The student recognizes the discursive strategies in a text.	8	24	19	79 %	**79 %**
			Total	**88 %**	

Tables 10 and 11 show the favorable changes of the present competition, since they went from 36% (pretest) of success to 88% (posttest) of approval, which indicates that the participants proposed solutions to the problems that were presented in the text, managed to perform intertextuality, contextualized the texts from their vision of the world and assumed a critical stance. Therefore, this competence requires a higher level of reading, which deals specifically with the confrontation of ideas or arguments. From there, it is possible to defend or refute the exposed approaches, managing to extract the ideas or conclusions of the reader. It is important to state that all the traits that evaluate this competence achieved a significant improvement. Among them, it is worth mentioning trait 2, characterized by the ability of students to establish relationships between a text and other texts or statements, which went from 4% of success (pretest) to 100% of success (postest). On the other hand, trait 3, which initially was at a percentage of 46%, ended with 88% accuracy, which means that the participants recognized the evaluative contents that the author raised in his writing, as well as the inferences or relationships that can be established from what appears in the text.

In the case of trait 4, the success rate went from 38% to 79%, which means that students strengthened the ability to identify textual typologies within a text, which makes it possible not only to recognize the author's worldview, but also helps to interpret reality itself. Finally, thanks to the previous features, it was possible to infer that the participants, with respect to trait 5, were able to improve in it; since the previous features allow to properly contextualize a text or the information contained in it.

Conclusions

The results of the empirical study showed significant differences between the results of the pretest and posttest in each of the levels of critical reading evaluated in the students. These differences are of great importance, since the students went from having a literal reading level, which means that their reading skills reached the understanding of continuous and discontinuous texts, as well as the recognition of the explicit information of the text, to a reading level characterized by the inference of implicit contents and the recognition of structures, discursive strategies, as well as reflection from a text on the author's worldview (customs, beliefs, judgments, ideological-political character and ethical positions, among others). Finally, it accounts for significant paratextual elements present in the text.

In accordance with the above, the qualitative study allowed to interpret that the program contributed significantly in the strengthening of critical reading skills in students, because students in Competition 1 managed to understand the meaning of the elements and events narrated in the text locally, give meaning to words according to the content, They found and understood the ideas, recognized textual typologies, which they did not master before the intervention. The same happened with Competition 2, where the participants showed great progress, since they understood paratextual elements, identified the voices inserted in the texts, recognized the micro and macrostructure of the text, which positioned the students at a performance level 4 (ICFES, 2018), this being very satisfactory for research. Finally, with respect to Competition 3, the participants were more confident in giving their arguments, proposing solutions to the problems given in the texts, making intertextuality in their opinions and recognizing the author's vision of the world and their own. In short, the students showed to be aware of their reading process and to have self-regulatory domains of their cognitive activity.

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