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ESLEC-7 (comprehensive reading strategy in 7 stages): An experimental approach to enhance reading comprehension in children

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ABSTRACT

Reading comprehension is a key skill because it enables students to create meaning, think critically, and gain knowledge. Many children, however, face difficulties in this area, which affects their school performance. This study examined the effect of the ESLEC-7 strategy on teaching reading comprehension to students in the third to sixth grades of primary school. The research followed a pre-experimental design with one group of 105 students, using pretest and posttest measures. The intervention applied the ESLEC-7 strategy systematically over a set period, and reading comprehension was assessed before and after using structured tools. Findings showed a significant improvement in literal, inferential, and critical comprehension, with statistically significant differences and moderate to high effect sizes, particularly in the upper grades. The study concludes that the ESLEC-7 strategy supports the overall development of reading comprehension by encouraging active reading, reflection, and text analysis.

1. Introduction

Education plays a crucial role in the social, economic, and political development of Latin America and is a determining factor in reducing inequality and promoting social mobility. Despite the advances in coverage and access in recent decades, the region still faces significant challenges in terms of the quality, equity, and efficiency of the education system. In this context, the case of Peru is especially illustrative; although the country has achieved significant improvements in school enrollment and has implemented curricular reforms aimed at developing skills, marked gaps persist between urban and rural areas, as well as between socioeconomic sectors (Santa María et al., 2021).

In addition, indicators such as performance in international and national tests highlight the need to improve the educational system. In the last National Assessment of Student Learning Achievements (ENLA) developed in 2024, 532,203 students in the fourth grade of primary school and 105,534 students in the sixth grade of primary school were evaluated in reading and mathematics. The results indicate that in the cognitive reading test, in the fourth grade of primary school, 3.4% of the students are located at the level prior to the beginning; that is, they did not achieve the necessary level of learning, whereas 24.8% reached the level at the beginning, that is, they achieved only elementary learning.

On the other hand, 39% reached the level in process, that is, the students reached the expected level of learning for the cycle, and only 32.8% reached the satisfactory level; that is, this group achieved the expected level of learning for the cycle. The reality in the sixth-grade assessment is even more worrisome since 14.2% are at the level prior to the start, 33.4% reached the level at the beginning, 27.5% reached the level in process, and only 24.9% reached the satisfactory level. These results highlight the low level of learning in reading in the country.

Reading comprehension is a crucial skill in the learning process, especially for elementary school children, as it lays the foundation for academic success in various areas of knowledge. However, the causes of poor reading comprehension in children are multifaceted and can be attributed to a combination of individual, educational, and socioeconomic factors. First, deficiencies in early language development can affect children's ability to understand what they read, as limited vocabulary and insufficient ability to recognize and decode words are significant barriers. Additionally, the lack of reading habits at home and the limited access to adequate reading materials can limit opportunities

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for practice and improvement (Soto Vázquez et al., 2019). In the educational field, the insufficient training of teachers in effective reading teaching strategies and the overload of curricular content, which does not allow a deep focus on reading comprehension, are also critical factors. Finally, the socioeconomic context can have a negative influence, since children from low-income households tend to have less access to books and an environment conducive to reading, which in turn affects their academic performance in this area.

Different pedagogical approaches, including innovative teaching strategies, have been implemented to improve this competence. Adequate didactic resources and information, and communication technologies are used in teaching. By involving students in a more interactive and motivating educational process, active classroom methodologies can significantly improve reading comprehension (Ochoa et al., 2019).

Various studies have established that motivation plays a fundamental role in text comprehension since students with greater motivation tend to achieve better reading results (Orellana et al., 2020). In this sense, fostering a dynamic learning environment adapted to individual needs can significantly enhance both motivation and reading comprehension. In addition, interactive didactic strategies such as reading challenges, reflective diaries, and correspondence between students and teachers can increase the interest and understanding of students (Lim et al., 2024; Yang et al., 2025). Finally, specific improvement reading programs that consider textual design and active strategies have positive effects on school performance at the primary level.

Recent research has also highlighted the importance of various linguistic and cognitive factors in reading comprehension. For instance, early oral language skills such as vocabulary and grammar have been shown to exert a significant influence on word reading and text comprehension, underscoring the value of early oral language support (Jago et al., 2025). Moreover, morphological awareness has demonstrated a robust association with reading comprehension, particularly in relation to complex words, with its impact becoming more evident as students grow older (Liu et al., 2024). In addition, executive functions such as working memory and cognitive inhibition have been shown to contribute to reading development, especially in bilingual contexts or among learners with limited proficiency in the language of instruction (Kilim and Prior, 2025). The mode of reading, whether on paper or screen, has also been the focus of investigation, with studies revealing differences in processing and comprehension, and relative advantages for print reading in terms of cognitive depth and temporal organization of content (Jensen et al., 2024; Li and Yan, 2024). Within this framework, the present study seeks to provide empirical evidence from the Peruvian context on the effectiveness of a structured instructional strategy—ESLEC-7—which integrates principles of language development, reading motivation, and active learning methodologies to enhance reading comprehension in primary education.

2. Methodology

This research was conducted in an educational institution in the Department of Puno. The school was in a peripheral urban area of the city, and most of the students came from the surrounding neighborhoods, with some from rural areas. Most of the parents of the children who make up the sample are engaged in market trade, ambulatory trade, and activities such as fishing and agriculture.

The research was conducted during the 2024 school year with children from the third to sixth grades of primary school. We used a quantitative experimental approach with a pre-experimental design, which allowed us to evaluate the effects of ESLEC-7 in a real context in primary school classrooms.

The sample included 105 primary school students, 33 from the third grade, 14 from the fourth grade, 33 from the fifth grade, and 22 from the sixth grade, selected from a public school in the city of Puno. The inclusion criteria for the sample were that the students belonged to the intervention educational institution and attended the respective grade; in addition, they should have informed consent approved by their parents to participate in the experiment. The exclusion criterion was that students who had less than 80% attendance at the workshops were excluded, as were those who presented physical difficulties in reading (blindness) and others, such as a diagnosis of dyslexia or significant psychological problems with a confirmed report. to avoid bias in the results.

The ESLEC-7 strategy applied is based on the communicative approach to the teaching of reading, which conceives of the act of reading not as a mechanical process but as a form of interaction between the reader, the text, and the context. It is also based on the sociocognitive theory of learning, the interactionist theory of the language of Vygotsky (Álvarez González, 2010), and six fundamental principles:

1. Purposeful reading: texts are selected based on their communicative function and relevance to students.
2. Textual diversity: various discursive genres (narrative, expository, argumentative, instructive, etc.) are employed.
3. Activation of previous knowledge: the anticipation and formulation of hypotheses before reading is promoted.
4. Learning reading strategies: this includes inference, summary, question formulation, clarification, and comprehension monitoring.
5. Collaborative work: this includes reading in pairs, group discussion, and shared interpretation of the texts.

6. Oral and written production from reading: students are encouraged to express opinions, write reviews, or transform texts read.

ESLEC-7 comprises seven stages that are developed within the framework of collaborative work, with the main protagonist being the student. In addition, each stage is accompanied by the use of various educational materials that arouse interest and motivation in students (Table 1). The experimental intervention consisted of the application of ESLEC 7 over two months; in learning sessions lasting 120 minutes each, ESLEC 7 was applied twice a week. The sessions included a variety of types of texts, narrative, informative, instructive, and discontinuous texts. To evaluate the impact of the intervention, reading comprehension tests were administered before and after the implementation of the strategy, which were aligned with national educational standards, composed of various types of text, and three levels of reading comprehension were measured (Table 2).

Table 1: Stages of the ESLEC-7 strategy

Stage	Description
1. Formulation of hypotheses	In this first stage, students anticipate the content of the text from the observation of images, a lexical strip with the title, or some specific material that stimulates their imagination and active participation. The objective is for children to formulate hypotheses about what the reading will be about, thus promoting a reflective and expectant attitude.
2. Identification of the type of text	Students analyze the superstructure of the text to recognize its typology (narrative, expository, argumentative, instructive, among others). This recognition allows them to activate previous schemes associated with the characteristics of each type of text, which facilitates more strategic and comprehensive reading.
3. Identification of the elements of communication	In this phase, students identify the basic elements of the communicative process present in the text: sender, receiver, message, channel, and context. This identification contributes to a comprehensive understanding, considering not only the content but also the communicative intention of the text.
4. Reading the text	Reading is the core of the strategy. It can begin with individual and silent reading, continue with a shared (collective) reading, and end with a model reading by the teacher. During this stage, strategies such as underlining, the use of marginal notes (summary), and other support techniques are applied, depending on the type and purpose of the text.
5. Reflection of the text	In this stage, reading comprehension is evaluated through questions or activities centered on three levels: literal, inferential, and criterial. This reflection can be oral or written and enables the verification of students' degree of understanding and promotes critical thinking.
6. Linguistic reflection	It is oriented to the recognition and analysis of formal aspects of the language present in the text, such as the use of capital letters, punctuation marks, and verb tenses, among others. This reflection promotes a contextualized learning of the language through the discovery and analysis of its rules in real situations of written communication.
7. Reading metacomprehension	This is the final stage, in which students critically reflect on the process they have followed to understand the text. They are invited to identify the strategies used, from hypothesis formulation to linguistic reflection, thus promoting awareness of their own reading and learning.

Table 2: Composition of the entry and exit tests

	Third and fourth grade		Fifth and sixth grade	
	Entrance	Departure	Entrance	Departure
Text types	1 story 1 recipe 1 infographic	1 story 1 infographic 1 news 1 recipe 1 instructional	1 poster 1 recipe 1 news	1 news 1 letter 1 infographic 1 instructional 1 recipe
Literals	8 questions	10 questions	8 questions	10 questions
Inferential	6 questions	12 questions	7 questions	11 questions
Criterial	4 questions	8 questions	3 questions	9 questions
Total	18	30	18	30

To mitigate possible biases, training sessions were held with the teachers in charge of applying ESLEC-7 and the evaluation tests. The inferential and descriptive analyses were performed using Excel and SPSS V.26.

3. Results and discussion

The present study evaluated the impact of the ESLEC-7 on the development of reading comprehension in students in third, fourth, fifth, and sixth grades of primary education. For this purpose, diagnostic tests were applied before and after the intervention, and descriptive and inferential analyses were carried out by grade, type of item, and global factors.

3.1. Descriptive comparison by grade

The descriptive results show a generalized increase in the average grades of all grades after the application of the ESLEC-7. In the third grade, the mean increased from 13.10 to 15.05; in the fourth grade, it increased from 11.50 to 12.78; in the fifth grade, it increased from 11.72 to 14.73; and in the sixth grade, it increased from 15.10 to 17.76 (Table 3). Similarly, a decrease in the dispersion of the results was observed, particularly in the upper grades, which suggests greater homogeneity in the levels of reading comprehension achieved. According to the data, there is a general increase in the average grade across all grades after the application of ESLEC-7. In addition, there was a particularly marked improvement in grades 5 and 6 (Fig. 1).

3.2. Inferential comparisons

Normality tests (Shapiro–Wilk) were used to determine that in most grades, the data did not follow a normal distribution ($p < .05$), so nonparametric Wilcoxon tests were applied (Table 4).

Table 3: Descriptive results of the entry test and the exit test

	Entry test					Exit test				
Grade	N	Medium	SD	Min	Max	N	Medium	SD	Min	Max
3°	33	13.10	3.97	0.00	18.89	33	15.05	3.35	8.00	20
4°	17	11.50	4.97	1.11	18.89	17	12.78	3.89	4.67	20
5°	33	11.72	5.16	0.00	18.89	33	14.73	3.84	0.00	20
6°	22	15.10	3.69	2.22	20.00	22	17.76	2.03	12.67	20

N: number of students; SD: standard deviation; Min: minimum mark; Max: maximum mark

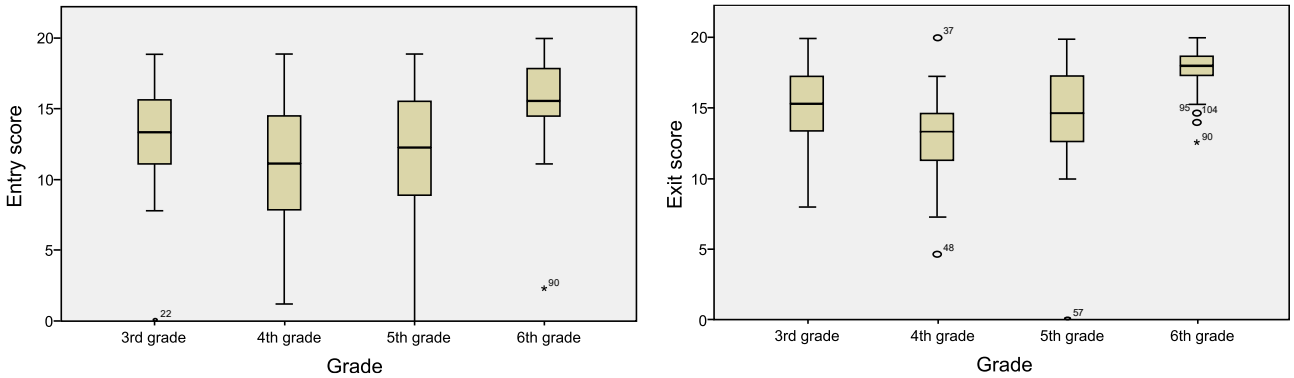

Fig. 1: Comparison of grades by grade and stage (entry vs. exit)

Table 4: Results of the normality test

Grade	Statistician Shapiro (input)	P-value (input)	Statistician Shapiro (output)	P-value (output)
3°	0.908	0.0086	0.979	0.754
4°	0.958	0.6004	0.968	0.7755
5°	0.916	0.0139	0.861	0.0006
6°	0.822	0.0011	0.881	0.0127

The results of the Wilcoxon test for related samples indicated statistically significant improvements in the 3rd (p = .028), 5th (p = .002), and 6th grade (p = .001). In the 4th grade, Student's t-test was used, without finding significant differences (p = .095) (Table 5).

Table 5: Results of the comparison of related samples

Grade	Test	Statistical	P-value	Normality entry (p)	Output normality (p)
3	Wilcoxon for related samples	158	0.028	0.009	0.754
4	Student's t for related samples	-1.77	0.095	0.600	0.775
5	Wilcoxon for related samples	114.5	0.002	0.014	0.001
6	Wilcoxon for related samples	27.5	0.001	0.001	0.013

On the other hand, the effect size (Cohen's d) revealed a moderate impact in grades 3 (d = 0.40), 4° (d = 0.43) and 5° (d = 0.47) and a large effect in grade 6° (d = 0.84), indicating a stronger impact of the strategy on older students (Table 6). This finding indicates that the impact of the ESLEC-7 strategy was particularly strong in the 6th grade and moderate in the other grades.

Table 6: Cohen's effect size results d

Grade	Cohen's d	Rough interpretation
3°	0.40	Moderate effect size
4°	0.43	Moderate effect size
5°	0.47	Moderate effect size
6°	0.84	Large effect size

3.3. Analysis by item type

The differentiated analysis by type of item revealed significant improvements in three levels of understanding: literal, inferential, and criterial. The most notable improvements were registered in the criteria items, particularly in the 3rd, 5th, and 6th grades. In the latter, the average number of correct answers for the criterion items ranged from 0.63 to 0.87. In the inferential items, which are considered cognitively more complex, the number of correct answers rose from 0.70 to 0.84, indicating notable improvement, with the 6th grade being the one that shows the greatest degree of global dominance after the intervention (Table 7).

Table 7: Results of the analysis by item type

Grade	Stage	Literal	Inferential	Criterial
3°	Entrance	0.72	0.63	0.57
3°	Departure	0.75	0.71	0.80
4°	Entrance	0.54	0.61	0.59
4°	Departure	0.65	0.62	0.67
5°	Entrance	0.67	0.55	0.45
5°	Departure	0.83	0.72	0.78
6°	Entrance	0.76	0.70	0.63
6°	Departure	0.91	0.84	0.87

3.4. Global analysis

In general, considering the 105 students in all grades, the average grade increased significantly from 12.83 to 15.15 (Wilcoxon, p < .001) (Table 8). This increase translates into a moderate effect size (Cohen's d = 0.48), which supports the efficacy of the ESLEC-7 in improving reading comprehension in the evaluated school population. The ESLEC-7 didactic strategy produced a statistically significant global improvement in the reading comprehension levels of elementary school students, with a moderate and consistent effect size.

Table 8: Overall results

Stage	N	Medium	SD	Min	Max
Entrance	105	12.83	4.62	0.0	20.0
Departure	105	15.15	3.68	0.0	20.0

N: number of students; SD: standard deviation; Min: minimum mark; Max: maximum mark

3.5. Discussion

The findings obtained in this research show that the ESLEC-7 didactic strategy produced statistically significant improvements in the reading comprehension of primary school students, with more pronounced effects in the upper grades, especially in the 6th grade. This improvement is reflected not only in the increase in the average marks but also in the observation of progress at three levels of understanding: literal, inferential, and criterial. These results coincide with previous research that highlights the effectiveness of structured didactic interventions in strengthening reading competence from a comprehensive and progressive approach.

In line with the study of Zanobini et al. (2025), programs focused on active reading and the use of metacognitive strategies, such as the Writing and Reading Workshop, contribute significantly to improving the understanding of narrative and expository texts. Similarly, ESLEC-7 promotes guided and reflective reading that favors reading autonomy, particularly at the criterion level, as evidenced in 6th-grade students.

Likewise, the results obtained are supported by the contributions of Chen et al. (2025), who emphasize that fluency in oral and silent reading mediates the relationships among decoding, listening, and reading comprehension. This finding reinforces the value of strategies such as ESLEC-7, which integrate multiple levels of textual processing and promote progressive, comprehensive reading from early to higher grades.

From a developmental perspective, the study of Guimarães et al. (2012) corroborates that students in higher grades tend to obtain better results in reading comprehension, which is also reflected in the investigated sample, where the greatest impact is evidenced in grades 5 and 6. This evolution can be attributed not only to cognitive development but also to the opportunity to have previously consolidated reading strategies that are reinforced with didactic approaches such as the one implemented.

On the other hand, investigations such as those of Ayamamani et al. (2023) highlighted the importance of incorporating visual, verbal, and interactive strategies in the teaching of reading. The ESLEC-7 strategy, which integrates the formulation of hypotheses, the identification of textual structures, and the connection with elements of communication, offers a coherent proposal with these multimodal and participatory approaches.

The discussion also finds support in works that have emphasized collaboration as a pedagogical strategy. For example, Blanch et al. (2013) and Rojas-Drummond et al. (2017) highlighted the effectiveness of dialogic programs and family tutoring to improve reading skills. Although the ESLEC-7 strategy does not explicitly include families, it does promote oral interaction, group analysis, and self-regulation, which generate similar conditions of collaboration within the classroom.

Likewise, strategies such as reciprocal teaching (Soriano et al., 1996) and the formulation of questions or the elaboration of summaries have been shown to be effective for reading comprehension, particularly in less structured texts. This type of activity is implicit in the sequential logic of ESLEC7, where students not only read but also actively anticipate, reconstruct, and evaluate the content read.

In addition, research such as that of Vidal-Abarca and Gilabert (1995) suggested that the inclusion of visual representations of key ideas, such as concept maps or diagrams, improves the understanding and retention of content. Although the ESLEC-7 strategy does not explicitly propose the use of these resources, the structuring of its stages facilitates the mental organization of the content, which translates into better performance at the inferential and criterial levels.

Taken together, the results of this study, complemented by international empirical evidence, confirm that well-designed didactic strategies, such as the ESLEC-7, not only improve reading performance but also help consolidate greater cognitive skills that allow students to interpret, infer, and critically reflect on the texts. These findings have important implications for teacher training in communication.

In this regard, ESLEC-7 emerges as a more comprehensive proposal compared to traditional strategies such as reciprocal teaching, which focuses on a limited set of metacognitive skills (predicting, questioning, clarifying, and summarizing) or scaffolding, which relies on progressive guidance provided by the teacher. Unlike these methodologies, ESLEC-7 offers a more integrated, sequential, and autonomous approach, articulated through seven stages that range from text recognition to critical reflection and self-assessment.

This sequence supports the structured and progressive development of reading comprehension skills at the literal, inferential, and criterial levels. Furthermore, its contextualized design addresses the specific characteristics and needs of primary school students in vulnerable settings, integrating motivational components and collaborative activities appropriate to their cognitive development. The structured yet flexible nature of ESLEC-7 not only guides learning but also fosters the internalization of autonomous comprehension processes, thereby facilitating the transition toward critical reading from an early age.

On the other hand, despite the positive results obtained, this study presents certain limitations that must be acknowledged for an accurate interpretation of the findings. For example, the pre-

experimental design with a single group and no control group prevented the establishment of strong causal relationships between the intervention and the observed outcomes. Additionally, the lack of randomization and control of external variables limits the internal validity of the study and opens the possibility of uncontrolled influences, such as maturation effects or simultaneous exposure to other pedagogical strategies. Finally, for future studies, it is recommended to employ quasi-experimental or experimental designs with control groups, larger and more diverse samples, as well as independent implementation to reduce the risk of bias.

4. Conclusions

The findings of this research allow us to conclude that the ESLEC-7 didactic strategy had a positive and significant effect on the development of reading comprehension in primary school students, especially in the upper grades. The improvement observed was reflected not only in the general qualifications of the students after the intervention but also in the different levels of literal, inferential, and criterial comprehension, indicating the comprehensive development of reading skills.

Statistical analysis confirmed significant differences between the entry and exit tests, with a moderate to high effect size, particularly in the sixth grade. This suggests that systematic and structured strategies such as ESLEC-7 are effective in strengthening reading skills when implemented in a sustained manner in the classroom.

In addition, the results obtained are aligned with those of previous studies that highlight the relevance of pedagogical approaches focused on the active participation of the student, guided reading, metacognitive reflection, and the integration of visual and communicative elements in the reading process. This theoretical and empirical support strengthens the validity of the ESLEC-7 strategy as an effective methodological proposal at the primary level.

Finally, the need to continue promoting applied research that allows adapting and optimizing strategies such as ESLEC-7 according to the characteristics of the age group, the educational context, and the level of previous competence of the students is highlighted. The implementation of this type of intervention not only improves academic performance but also helps to train critical, autonomous, and competent readers from the early stages of schooling.

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Compliance with ethical standards

Ethical considerations

This study adhered to the ethical standards governing research involving human participants. Approval was obtained from the Research Institute of the National University of the Altiplano, and authorization was granted by the administration of the participating educational institution. Since the participants were minors, informed consent was obtained from their parents or legal guardians, along with the students' assent. Participation was entirely voluntary, and students were informed of their right to withdraw at any stage of the study without any consequences. All collected data were treated with strict confidentiality and reported anonymously to ensure the protection of participants' identities.

Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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