The Impact of Metacognitive Reading Strategy Instruction on English Language Lifelong Learning: A mixed methods study with Physical Education Students.

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ABSTRACT: This research addresses the challenge of improving reading comprehension skills in English as a foreign language among Physical Education (PE) students at a higher education institution, these students obtained low results in standardized tests. The study aimed to examine the effects of implementing a mixed program combining metacognitive reading strategies and lifelong learning on students' performance in standardized tests and real-life contexts. Conducted using a Sequential Explanatory Design, the study included a quantitative phase to assess improvements in reading comprehension and a qualitative phase to explore factors that facilitated or hindered the learning process. The results indicate that for foreign language learners, a secure classroom environment where negative emotions can be openly expressed is crucial for successful language acquisition. This research underscores the importance of metacognitive strategies in fostering better reading outcomes and lifelong learning in a foreign language context.

1. Introduction

The investigation highlights the importance of mastering English as a "lingua franca" in today's world particularly in the field of "intercultural communication" (Crystal, 1997, pp 261-262; Zhang and Lütge, 2023; Kachru, 1992.). English is considered a language of opportunity and power, facilitating cultural exchange and enabling people to discuss perspectives, values and ideas beyond borders. In this context, teaching and learning English has become a priority for many governments, especially in Latin America, where policies promoting bilingualism have been implemented. Those politics also have been implemented in Colombia, where, mastering English as a foreign language is an institutional objective (Law 1651, 2013). One of the ways of testing that bilingualism in Colombia is appropriately implemented is by implementing standardized tests. Those tests, such as Saber Pro tests (López, Ropero, and Peralta. 2001; Benavides, 2015, Soto et al., 2023) are meant to test student's advancement in English through their academic lives, particularly in higher education. Those tests, the foreign language section, are written in English and measure, up to some extent, students' reading comprehension.

All around the world, higher education institutions have made efforts by preparing learners for demanding situations that are faced in academia, professional and daily life. That is the case of Unidad Central del Valle del Cauca. This higher education institution has attempted to prepare students in a foreign language (English). However, there are certain populations inside the institution that still struggle to appropriate this fundamental tool. This is the case of the students of the Bachelor of Physical Education,

Recreation and Sports. The latest results obtained in the Saber Pro tests show that these students are still below the national mean. Further, after reviewing the Educational Project of the Program (PEP) it was evident that even though English is an important component of the program, much work is still needed to accomplish the objective of preparing students for real world challenges regarding English, the importance of our research lies in its attempt to help overcoming this institutional difficult (Betancur at al, 2021).

One critical component regarding acquiring a foreign language is reading comprehension. Solé (2012) defines reading comprehension as "a process that entails the interactions between the reader and the text". In this process, the author states three key phases: before reading, during reading and after reading. These phases can be addressed as a process in which the reader is aware of the task he or she is performing. Regarding reading as a conscious process, the concept of metacognition emerges. Metacognition is defined as the knowledge and awareness of one's information processing (Flavell, 1979; Kobayashi, 2016). In other words, it involves performing a task while being completely aware of what one is doing. Metacognitive skills account for successful learning (Coskun, 2015), as they enable learners to set goals, monitor their progress, and evaluate their development in relation to specific tasks such as reading in a foreign language.

Self-awareness about one's own process of learning allows individuals to take control of their goals, processes and achievements. Learning how to approach a task can be applied to a broad variety of environments that constitute human life such as, reading a meme, a newspaper or a research article in English. This awareness is deeply related with the concept of Lifelong Learning (UNESCO, 1972; Walters & Cooper, 2011) which implies that a person should continue learning during his whole life. The formation may be academic or non- academic with the primary objective of enhancing development. Efforts have been made to allow learners all around the globe to continue learning after completing formal education (Sahah, 2009).

Research on combining both concepts, metacognitive reading comprehension skills and Lifelong Learning, is scarce in the literature of English Language teaching. Even though most research about these concepts reveals positive effects on learners (Flavell, 1979; Oxford, 1990; Kobayashi, 2016; Huang. et al., 2009; Fogarty et al., 2017; Soto et al., 2019) they have been rarely combined. Although some research has been conducted in metacognitive strategies alone (Phaiboonnugulkij, 2017; Coskun, 2015; Casas, 2018; Hamiddin. and Saukah. 2020; Khreisat, 2022) and some other on lifelong learning (Širca. & Sulčič. 2005; Glynn et al., 2011; Christie. & Kumar. 2018), no evidence of research that combines both was found. Our investigation searched to close that gap and provide insights on what are the implications of implementing a mixed metacognitive reading strategies and lifelong learning program in student's reading comprehension. This study's relevance lies in its contribution to the teaching and learning process of students of the mentioned program. Likewise, we search to provide data that feeds the discussion around the strategies implemented in class to ensure that the teaching-learning processes are harmonious and have positive effects on the participants. The considerations that emerge from our research seek to contribute to the understanding of the tensions between those elements that inhibit the teaching processes such as anxiety or distress and those that facilitate the processes like signifying the value of English in students' academic or professional life.
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2. Theoretical Overview of the Main Concepts

This literature review explores the critical role of reading comprehension and metacognitive strategies in enhancing English as a Foreign Language (EFL) learning outcomes. It highlights key theoretical perspectives on reading comprehension, particularly in the context of metacognitive awareness and its importance for self-regulated learning. Additionally, it discusses the relevance of lifelong learning in today's educational landscape, emphasizing how metacognitive strategies contribute to continued learning

throughout life.

Reading comprehension.

In their study, Al-Khresheh and Al Basheer (2023) characterize reading comprehension as a multifaceted cognitive process that requires the reader's prior knowledge and experience to employ effective strategies. This task is significantly influenced by the reader's prior knowledge and their individual reading styles, as highlighted by Solé (2001). Reading, according to these authors, is an active and constructive process where the reader actively builds their interpretation of the message through their experiences, prior knowledge, hypotheses, and inferential abilities.

Majadly and Massarwa (2020) further elucidate the process of reading comprehension as involving the simultaneous extraction and construction of meaning through an interactive engagement with written language. This process involves three interconnected components: the reader, the text, and the dynamic interaction between them. These definitions converge in acknowledging the reader's pivotal role in the reading process, with their interaction with the text guided by their prior knowledge, significantly influencing the outcome of comprehension.

Reading Comprehension in English (EFL).

Reading comprehension in English in the role of foreign language (EFL) refers to the aptitude of learners to comprehend, interpret, and scrutinize written texts in English, despite it not being their first language. This entails employing several cognitive and metacognitive strategies to decipher written material, deduce implications, assess substance, and merge novel information with pre-existing understanding. Metacognitive strategies, such as intentionally organizing, reflecting on, and assessing one's own comprehension and learning process, are crucial for enhancing reading comprehension in English language learners (EFL), according to Al-Khresheh and Al Basheer (2023). Previous research has shown that individuals with a higher proficiency level in a language exhibit better comprehension of written materials, as they have acquired a larger vocabulary, improved grammatical understanding, and a deeper cultural awareness (Anderson, 2002; Artieda, 2017; Taheri et al., 2020; Yu, 2022; Chen et al., 2023). This correlation can be attributed to the reader's expanded vocabulary, improved grammatical grasp, and enhanced comprehension of the cultural context.

Reading comprehension and its relevance in education.

Reading comprehension is a complex cognitive process that involves various strategies and skills, including prior knowledge, metacognitive awareness, and linguistic abilities. In today's diverse and information-rich culture, it is a crucial skill for acquiring knowledge and navigating academic and professional settings, as well as facilitating cross- cultural communication. To investigate the effects of integrating metacognitive reading strategies and lifelong learning on reading comprehension abilities, our study employs Isabel Solé's (2012) theoretical framework. Solé's theoretical framework places emphasis on the importance of reading skills and self-regulation in the reading process, potentially leading to improved comprehension of texts among students (Solé, 2012).

This particular framework holds relevance for readers as it works as an opportunity to enhance their comprehension, engage in introspection over its substance, and integrate it with their pre-existing knowledge. Solé (1998) introduces a thorough framework for understanding the reading comprehension process. This model also provides practical strategies for enhancing reading comprehension. The after-reading phase incorporates a variety of cognitive and metacognitive activities that help readers in comprehending the material. The aforementioned processes encompass the tasks of summarizing, synthesizing, evaluating, and reflecting, which involve engaging and analysing the information conveyed within the text. By participating in these activities, individuals have the opportunity to enhance their comprehension when reading, recognize any voids in their knowledge, and establish associations with other texts and personal experiences.

Model chosen for our investigation

The decision to consider Isabel Solé's model for this research was based on numerous important factors among the previously stated models of reading comprehension. One reason is the enhancement of reading comprehension, the strategies suggested by Solé have been implemented and evaluated, demonstrating their efficacy. Another justification for adopting Solé's model is its promotion of metacognitive skills, Solé's model places priority on the student's ability to be self-aware, which aligns seamlessly with this study.

Furthermore, an additional rationale for considering Solé's postulates has to do with the prospect of lifelong learning provided by the author's comprehensive model, this model emphasizes the importance of active involvement in the reading process and the development of metacognitive abilities to enhance comprehension, which may be beneficial for Lifelong Learning. Finally, the author has developed a comprehensive model for reading comprehension that includes three essential stages: pre-reading, during reading, and post-reading, those were precisely the stages developed during the intervention process.

Metacognitive Strategies for Reading in Foreign Language (English EFL):

Metacognitive processes encompass intentional and mindful strategies utilized by individuals in the process of understanding, retaining, and applying knowledge (Zimmerman, 2011). Metacognition pertains to the cognitive process of exhibiting consciousness and attentiveness towards one's own mental operations. The available empirical research indicates that learners who actively employ metacognitive methods, which involve purposefully reflecting on and understanding their own learning processes, generally demonstrate greater levels of achievement in their educational pursuits (González. & Londoño. 2019; Habók & Magyar. 2020; Taheri et al., 2020; Ranjan et al., 2019; Al-Mekhlafi. 2018).

Lifelong Learning in the 21st Century.

The concept of lifelong learning gained prominence in the 1970s through UNESCO's efforts, encompassing a self-driven and ongoing pursuit of knowledge for personal or professional growth. According to Volodymyr (2020), lifelong learning is a significant aspect of modern educational, social, and international political spheres. This concept is widely recognized as crucial for individuals of all ages and professions, as it helps them adapt to the rapidly changing world. With the arrival of technological advancements, digital transformation, and an abundance of information, lifelong learning is more important than ever, particularly in light of global phenomena such as demographic changes and recurring economic and social upheavals.

In conclusion, this review identifies the gap in research combining metacognitive reading strategies with lifelong learning in EFL contexts. The study addresses this gap by examining how such an approach can enhance reading comprehension for EFL learners, particularly in higher education settings. This research contributes to ongoing discussions on improving teaching strategies that align with the demands of academic, professional, and everyday life.

3. Methodology

This research followed the Explanatory Sequential Design developed by Creswell (2018), which consists of two distinct phases. Phase one involved the collection and analysis of quantitative evidence, while the second phase focused on qualitative evidence. The qualitative data collection was guided by the initial quantitative results, meaning that the second phase was based on the findings of the first phase. The findings from both phases were then merged in the final report. Our objective aimed to examine the implications of implementing a metacognitive reading strategies and lifelong learning program on the reading comprehension abilities of physical education students at UCEVA. This required a thorough understanding of both the quantitative results, such as changes in reading comprehension scores, and the qualitative experiences, such as students' impressions of the program and changes in their learning

practices. One limitation of the study was the potential for time constraints to affect the mastery of metacognitive strategies, as participants indicated they needed more time to practice the techniques. Additionally, while all participants were involved in the focus group, the role of the researcher, who was simultaneously teaching and collecting field notes, could have introduced bias. The field notes provided insights into both classroom dynamics and individual student reactions, but a clearer explanation of this dual role is needed

The Explanatory Sequential Design was deemed highly appropriate for this inquiry due to its capacity to facilitate an initial quantitative analysis of the program's impact on reading comprehension skills, followed by a qualitative exploration aimed at understanding the underlying causes behind these quantitative results. The quantitative phase of the study included administering pre- and post-tests to assess changes in students' reading comprehension abilities. The qualitative phase involved conducting a focus group and observations during the intervention to delve into their experiences with the program and ascertain its impact on their learning. The discussion points in the focus group were designed to explore students' emotional responses and experiences with the intervention. The intersection of the focus group findings and field notes revealed both the potential and the challenges of integrating metacognitive strategies within the existing curriculum. Although a substantial amount of data was gathered, it offered comprehensive insights into the barriers and facilitators of learning, particularly regarding the emotional and cognitive aspects of reading comprehension.

Context and Population.

We conducted this research inside the higher education setting, specifically at the Unidad Central del Valle del Cauca. The establishment is situated in the city of Tuluá, within the Valle del Cauca department of Colombia. This institution provides English as a Foreign Language modules with the specific goal of enhancing communicative abilities of its students in English. The study population consisted of students from various professional backgrounds, including engineering, legal, undergraduate, industrial, and agricultural engineering, who were enrolled in an English module. The participants chosen for this study were the students enrolled in the Physical Education, Recreation, and Sports program, as they had the lowest proficiency in English communication. The sample consisted of 10 students enrolled in this degree program, all of whom were in the advanced stages of their academic path. The students pursuing a Bachelor's degree in Physical Education expressed their decision to delay registration for English modules due to a lack of affinity for the language and a failure to acknowledge its significance in their academic, professional, and personal growth.

Instruments and Data Collection Procedures.

Pre and post-test.

The instruments and techniques used to gather information in our study were carefully chosen to align with the context, topic, and objective of the research. Therefore, due to the mixed research design, instruments that could measure both quantitatively and qualitatively variables of this study, were selected and implemented. The initial research instrument implemented was a Pre-Test (McGraw-Hill, 2015). This standardized test aims to place the reader in a specific level of the Common European Framework of Reference (CEFR), based on their reading comprehension. The assessment of reading comprehension

is based on the number of errors made by the participant. If the student makes a specific number of errors, the test determines their placement within the categories of reading comprehension established by the CEFR. For example: when a student made more than 7 mistakes for the whole test, the test determined that the student was placed in Comprehension A1 or A2. The test is specifically designed to assess logical reasoning, comprehension of questions, vocabulary, comprehension of factual information, deductive reasoning, synonyms, restatement questions, and comprehension of specific topics. This same examination was conducted with the completion of planned interventions on metacognitive reading strategies and lifelong learning and the results were compared and analysed. There were three main

reasons for this decision: variables decrease; advancement assessment; and measurement accuracy.

Field diaries.

The field diary (Hernández, 2006) was chosen as an observation instrument during the interventions for one main reason. This has to do with the fact that the researcher is considered relevant in our research; his perceptions and observations can contribute to the understanding of the problems studied. This instrument made it possible to collect valuable information on subtle phenomena that occurred during the interventions. Observations, perceptions, opinions, sensations of the researcher were recorded, as well as the interactions of the researcher with the students and the students with each other. The reactions or emotions of the participants were another important aspect that was recorded in the field diaries. This instrument was implemented during the 8 interventions carried out during the process. In two interventions the pre and post-test were administered. In the other six interventions, direct instruction combining metacognitive reading strategies and lifelong learning was given to the participants.

Focus Group.

The focus group was implemented because this instrument allows a better understanding of the dynamics that occur in the classroom. Hernández (2016) argued that this type of instrument is based on the integration of the group to generate information. The focus group implemented in our research was carried out in the form of a discussion guide for a focus group, also known as a moderation script. This guide provides a framework for discussion and helps ensure that all essential topics are covered. The moderation script was meant to ease open and productive discussion about the experiences that were undergone throughout the intervention process. In its elaboration, it was considered that the discussion guide should be flexible, clear, sequential and get into one single idea at a time.

Data Analysis.

The data processing method used in this research is based on the process proposed by Strauss & Corbin (2008). This process is known as *grounded theory analysis* and is a systematic and rigorous method for interpreting qualitative data. The analysis comprises three main stages: *open, axial* and *selective coding*. In the *open coding* stage, the data are broken into discrete parts, carefully examined and contrasted to find commonalities and distinctions. Codes and categories are identified, which serve as the building blocks of the theory. Concepts are the basic units of analysis, which were grouped into more abstract categories.

The subsequent phase was axial coding, in which the data are reorganized in a new way after open coding. Relationships between categories and subcategories were identified and the data organized around central axes or categories. This process helped to develop a theoretical structure that could explain the phenomena studied. In the last stage, which is known as selective coding, the researchers combined and enhanced categories in order to construct a hypothesis. The theory is constructed based on a core category that establishes connections with all other categories. The researchers additionally ascertained the conditions, actions/interactions, and effects associated with the core category. Strauss and Corbin's qualitative data analysis can be useful in exploring and understanding complex phenomena, such as student attitudes and motivations, teaching and learning strategies, and factors that influence success of language learning.

4. Discussion

The findings of our study aimed to understand the implications of implementing a mixed program of metacognitive reading instruction and Lifelong Learning on the reading comprehension skills of students in Physical Education, Recreation, and Sport at UCEVA. Our research followed an Explanatory Sequential Design, with a quantitative phase involving pre- and post-tests, followed by a qualitative phase with field

diaries and a focus group, the results are presented as follows.

Quantitative Results.

The quantitative results showed a significant decrease in the total of errors made by participants in the post-test compared to the pre-test, with an average decrease of 19.4%.

Table 1

Pre and post test results compared in terms of errors.

Participant	Number of errors Pre-Test	% Errors Pre test	Number of errors Post Test	% Errors Post Test	Participant
Ann	5	31,25%	2	12,5%	18,75%
Brad	2	12,50%	1	6,26%	6,24%
Candance	4	25%	2	12,50%	12,50%
Dereck	3	18,75%	1	6,26%	12,49%
Eleanor	5	31,25%	2	12,50%	18,75%
Frank	4	25%	1	6,26%	18,74%
Gale	6	37,50%	3	18,75%	18,75%
Hiroki	5	31,25%	1	6,26%	24,99%
Julie	11	68,75%	2	12,50%	56,25%
Jamal	7	43,75%	6	37,50%	6,25%
Average	5,2	32,50%	2,1	13,1%	19,40%

Table 3 shows that the decrease in the participants' results was significant. In each case, a decrease in the number of errors made in both tests is observed. The table shows the general average of errors of the group during the Pre-Test was 32.50% equivalent to 5 questions in the test and that this same average fell to 13% in the post-test, equivalent to 2,1

questions. This suggests that the mixed program of metacognitive reading and lifelong learning strategies had a positive impact on students' reading comprehension.

The pre and post-test include questions of diverse types. The whole set of questions were designed to measure participant's reading ability though measuring the number of errors made by each student. The results obtained in the question types are presented as follows in Table 2. Those kinds of questions presented in the pre and post-test were: *vocabulary, comprehension, basic factual information, synonyms* and *specific concept question.*

Table 2

Comparison number of errors per test and per participant.

	Number of errors: Pre-test					Number of errors: Post-test				
Participant	Vocabulary.	Comprehension.	Basic factual info.	Synonyms.	Specific concept.	Vocabulary.	Comprehension.	Basic factual info.	Synonyms.	Specific concept.
Ann	2	2	1	0	0	1	1	0	0	0
Brad	1	0	0	0	1	0	1	0	0	0

Candan Ce	1	1	0	2	0	0	1	0	1	0
Dereck	0	0	1	1	1	0	0	0	1	0
Eleanor	3	1	1	0	0	1	0	1	1	0
Frank	2	1	0	1	0	0	1	0	0	0
Gale	1	2	2	0	1	1	0	1	0	1
Hiroki	0	1	2	2	0	2	1	0	0	0
Julie	2	2	4	2	1	0	0	2	0	0
Jamal	1	0	2	1	3	1	0	2	2	1

Table 2 portrays the different type of questions posed in the pre-test and post-test. Furthermore, Table 2 presents a comparison of the outcomes achieved by each participant in both examinations. A descriptive statistical analysis of Table 2 reveals an overall decrease in the frequency of errors for nearly all participants. Notably, participant Julie's case stood out. Julie's performance improved from 11 errors in the pre-test to 2 errors in the post-test. The questions related to *basic factual information* posed the greatest challenge for Julie in both tests. Participant Jamal encountered similar difficulties with the same category of questions, as seen by Table 2. Jamal made an equal number of mistakes in both examinations when it came to answering *basic factual information questions*. Remarkably, participant Brad exhibited flawless performance in the *comprehension* type questions during the pre-test, although he committed an error in that particular question type in the post-test. A similar scenario arose with Eleanor, where she exhibited no mistakes on the *Synonym* type questions during the pre-test. However, Eleanor did commit an error on this particular question type during the post-test. Gale and Hiroki had similar cases, wherein they committed mistakes on the post-test that they had not previously made on the initial test. These observations can be seen in Figures 1 and 2, which illustrate the performance of each student in terms of the different types of questions and their performance in both tests.

Figure 1 shows the *type of questions* and how participants performed in the pre-test, while, Figure 2 displays the *questions types* compared with *student´s performance* in the post test. If compared both figures (Figure.1 & Figure. 2), the researcher found that participants display a variety of results. For example: Julie shown improvement in her performance by reducing the amount of errors she made in *vocabulary, comprehension*, *synonyms*, and *specific concept questions*. Nevertheless, Julie's mistakes in the question regarding *basic factual information* remained consistent in both tests. According to the results, Julie's only area of non-improvement was her ability to comprehend fundamental factual information.

Another example of a particular result was the case of Brad, he demonstrated improvement in his skills related to *vocabulary* and *specific concepts*; the number of errors in these skills decreased from 1 error in the pretest to 0 in the p ost-test. During the post-test, there was a single *comprehension* error observed. This single mistake had not been registered in the pre-test.

Finally, highlight Frank's case. Frank demonstrated improvement in *vocabulary* and *synonyms* questions. He had had one error in each question on the pre-test. Frank did not repeat his mistakes on the post-test. However, in the comprehension question, there was a new mistake registered in the post test. This mistake had not been evidenced in the pre-test.

These 3 cases were the ones that drew the researcher's attention due to their particularity and the questions they raised for the discussion session. Figure 2 shows the question types and how participants performed in the Post-test. These results were obtained after the implementation of the mixed plan of metacognitive reading strategies and Lifelong learning. The data presented in Figure 2. Was already contrasted with data in Table 1.

Qualitative results.

After doing the grounded theory analysis (Strauss & Corbin, 2008), qualitative results revealed three main categories: *difficulties in implementing metacognitive strategies, possibilities of metacognitive*

strategies and Lifelong Learning intervention, and *use of metacognitive strategies in the classroom*. The categories are described as follows:

Difficulties in implementing metacognitive strategies.

This category was built for encompassing negative sensations manifested by participants through the implementation phase and through the focus group. Those negative emotions included: *time management*, *fear, distress* and *frustration.* Examples of each negative emotion is presented below:

- *The little time. Yes, because, let's say, you proposed activities that let us hooked. And one wanted more*. Jamal. Focus group (Fg).
- *Yes, the Little time to use all the strategies*. Candance. (Fg)
- *No, come here, I'll tell you here. What if I am wrong? No, what a shame.* Julie. Field diary (Fd.2).
- *I am not going to say it (*the answer*) in front of everybody*. Gale. (Fd.2)
- *Ah, no, this is stressful, I do not like English*. Julie. (Fd.1)
- *Ah, hurry up, write what I tell you, la u, yes, la u (*law*). No teacher, this is too stressful*. Dereck (Fd.3)
- *No, now I am not going to do it, I do not understand this*. Julie (Fd.7)

Possibilities of metacognitive strategies and Lifelong Learning intervention.

This category was based on the diverse possibilities for implementing metacognitive strategies and lifelong learning that were noted by participants through the implementation phase. This category encompasses: *positive emotions and reactions* and *Lifelong learning experiences*. Evidence of both codes is presented as follows:

- After a few minutes of work, the participants' reactions of excitement and joy began when they realized that, without understanding the entire text, they could understand what the meme said and were able to grasp the joke it contained. Field diary 2.
- All participants expressed enthusiasm for having understood the jokes in the memes even without understanding all the words in English. Field diary 2.
- "No well, what my partner said, I think that, let's say, in the professional field, if you learned something today, tomorrow things will evolve and you can't stay in that, so you have to keep learning, as the professional field forces you to keep updating yourself to what is happening". Gale. (Fg).
- *I think, this (*metacognitive Reading strategies*) is going to be a good tool that will be useful in our degrees and in our daily life. Julie*. (Fg).

Use of metacognitive strategies in the classroom.

This category is composed by those observations made regarding the practical use of MRE in the classroom and how students included this use in their interactions. Those situations in which MRE were applied by students can be organized in three different moments: *before, while and after reading.*

Use of Before Reading Strategies

- Reading of images. *Look, in the picture we see that they (cave men) had roasters, and we know that is not the case*. Dereck. (Fd.2).
- Prior knowledge activation. *To try and remember what one already knows about that, about the topic one is about to read. Dereck*. (Fd.2).

- Anticipation. *If there is a picture of, let's say, a whale, of course one nows that the reading is going to be about whales, the ocean and so on*. Jamal. (Fd.2).
- Pre reading. *Before, I was not used to think about what I was about to read, I just read like that, and in so many times, I was not sure if I had fully understood. Now, I take my time to reflect on what I am about to read*. Jamal. (Fg).

Use of while Reading Strategies.

- Main idea identification. *For you, what is the main idea*. Hiroki (Fd.5)

- Keyword identification. *Look, the key words can be seen in the title*. Brad (Fd.5)
- Monitor understanding. That strategy of asking oneself if one is understanding or, doing the exercise of imagine that one is explaining to other are new for me, but I think they are useful. Candance. (Fd.2)

Use of After Reading strategies.

- Summarize. *If someone is able to summarize the info, one could say that he or she understood the message*. Ann. (Fd.6)
- Reflection on the reading process. At least in my case, I have never asked myself about my feelings or sensations while reading. Jamal (Fg).

The results obtained from the different data collection instruments suggest that there is a positive impact on participant's reading ability. This positive impact occurs, at least in part, due to the implementation of metacognitive reading strategies in combination with lifelong learning. The results of the qualitative phase suggest that there were three predominant factors that influenced the qualitative results of the participants. The first factor has to do with the presence of negative emotions that restrict the teaching-learning process. Negative emotions and reactions of the participants towards the target language were observed; towards some of the proposed activities; or negative emotions or towards the possibility of making a mistake in front of their peers. These negative emotions affect students' disposition to the interventions, preventing them from learning what was intended to be taught. Those negative emotions could be better managed if the classroom becomes a safe space in which learners can express their emotions towards the language. This affirmation is based on the case of "*Juliet*", she was a participant that manifested an open reluctance to participate in the process, she openly affirmed: "*I do not like English*". The researcher observed that the situation was an opportunity for negotiating the meaning of the language with Juliet. These affirmations align with (Casas, 2018; Hamiddin & Saukah, 2020; Sarbazi et al., 2021; Al-Qahtani, 2021) . These studies are related applying metacognitive strategies improve the reading comprehension ability among participants. Besides this observation regarding Juliet confirms the theory stated by Oxford, when claiming that learning strategies are oriented towards promoting competencies among students that make them independent and autonomous learners (1990).

Besides negative emotions, time management proved to be a factor that prevents the harmonious development of interventions based on metacognitive strategies. Time played against the intervention process. The participants stated that they needed more time to master the strategies and be able to implement them more easily. The lack of practice, due to the limited time window available, influenced the participants' perception of the strategies and their potential in real life. These results align with what Wei, Xu & Zheng (2024) suggest regarding how low achievers showed less positive opinions towards value and utility toward English reading Time management is a factor that may restrict the learning process, our research suggests that through practice, learners may acquire the ability of implementing reading strategies when necessary. That constant practice would reduce the time needed for implementing strategies before, during and after

reading, enhancing comprehension. Douglas claims that time management may increase, in a weak stent, student's reading comprehension ability (2016).

Another factor that influenced the instruction process is related to the *various possibilities of implementing metacognitive strategies in everyday life*. This factor is perceived positively by the participants. Once they realize that it is possible to transfer metacognitive strategies to the most diverse scenarios, they become desired tools. It was evident that the subjects recognized the value of constant training throughout life and the help that metacognitive strategies offer in this process. These affirmations align with Rincón et al. (2021) who recognizes reading strategies as a source of improvement.
Lifelong learning is a strategic approach that encompasses the entirety of the educational spectrum. In recent years, it has garnered substantial momentum as a result of the swift environmental changes that need the acquisition of new information and skills. (Širca. & Sulčič, 2005).

Finally, the *use of metacognitive reading strategies*. It was evident that the study group made use of the various metacognitive reading strategies during the execution of the various exercises proposed during the interventions. The participants clearly remembered most of the strategies and put them into practice appropriately, this is in line with Deliany. (2020). Besides, the use of the strategies outside the intervention sessions was reported by participants; these students reported successful implementation results. In a similar vein, Razkane & Diouny (2022) conclude the relevance of explicit strategy instruction as means of a achieving effective understanding of reading tasks. The constant use of the strategies is perceived as a factor that positively influences the intervention process since it allows one to determine that the students recognized their value and usefulness and were encouraged to experiment with them. These suggestions align with Phaiboonnugulkij (2017) regarding recommendations about training, where low achievement students required an in depth strategy training.

In the light of other studies carried around metacognitive reading strategies in a foreign language. Participant's results obtained in this study align with the vision that claims that when individuals are explicitly educated in reading strategies and how to implement them, comprehension and vocabulary levels increase, along with awareness of reading strategies in EFL (Fogarty et al., 2017; Huang et al., 2009; McNamara, 2017; Soto et al., 2019). Besides, other authors who worked with the effects of reading strategy training on reading comprehension (Anderson, 2003; Huang et al., 2009; Shang, 2018) maintain that reading comprehension is positively affected by implementing metacognitive reading strategies.
The results obtained in our research strengthen the claims that students without metacognition, as O'Malley et al. (1985) have concluded, are 'learners without direction'. Further, other voices claim that if learners are not aware of which strategies apply, and the right moment of doing so, in comprehending a text, then the teaching learning process has failed (Schraw, 1994; O'Malley et al., 1985; Carrell et al., 2001).

Regarding the available theory, the results obtained by students in the pre and post-test align with Kobayashi's ideas when he asserted that "activated metacognition can conduct towards more effective learning" (2016). Furthermore, there are several studies whose results suggest the same connection between metacognitive strategies and an improved comprehension in foreign language (Flavell, 1979; Oxford, 1990). If a comparison between the results obtained so far in our research is made with previous research and theory, it is possible to conclude that this investigation's results are in agreement with the available research and theory that affirms that, at least to some degree, metacognitive strategies implemented to strengthen teaching-learning processes have a positive effect in the vast majority of cases.

The findings on negative emotions, such as frustration and anxiety, highlight their significant impact on the learning process, particularly for EAL learners. These emotions, as seen in participants' reluctance to engage with English, may have limited the full potential of the metacognitive strategies implemented González at al, 2021)However, by adding a lifelong learning component into the strategy instruction, such fears can be diminished, since participants engaging in lifelong learning programs tend to express

opinions and feelings in social settings and think more positively (Law et al, 2023).

5. Conclusions

This research focused on the problem of low English performance among physical education, recreation, and sports students at UCEVA. The study investigated the effects of implementing a mixed program of metacognitive strategies for reading and lifelong learning on the reading skills of these undergraduate students. A mixed research design was used to determine the change in reading ability after the interventions and to identify factors that restricted or facilitated the achievement of the results. The first finding showed a positive outcome of the intervention, with an apparent positive impact on the reading ability of the participants, supported by the quantitative results of the pre- and post-test. The second significant finding indicated that an intervention plan based on metacognitive strategies combined with lifelong learning positively impacted the reading skills of students in the degree program. The investigation also found that tensions in the classroom influenced the willingness of participants to engage in their learning. It was discovered that participants could be helped to realize that the knowledge and skills developed during the intervention could be implemented in various scenarios

The findings aligned with the available literature, suggesting that the implementation of metacognitive reading strategies contributes to the learning process by providing useful tools for academic, professional, and personal development. The literature also emphasized the importance of developing a sense of lifelong learning, which was reinforced by the research findings. This investigation contributed to the field of foreign language teaching by highlighting the need to consider the emotional tensions between students and the learning of a foreign language. It offers insights into the opportunities and challenges associated with teaching English within physical education programs, providing a foundation for further investigation and advancement of pedagogical approaches and curriculum design. Two suggestions emerged from the research: 1) giving students space to express their emotions regarding learning a foreign language, and 2) helping participants become aware of their own cognitive processes. Encouraging self-reflection on internal learning processes is essential for participants to explore their limitations and potentialities, generating empowerment and self-control.

However, not all claims are fully substantiated by the evidence presented, particularly regarding the broader impact on foreign language teaching. While the study provided useful insights into the role of metacognitive strategies in academic and personal development, its contribution to the field of foreign language teaching needs to be better articulated in future discussions. Additionally, the findings emphasize the importance of creating a learning environment that encourages emotional expression and fosters metacognitive awareness, which are essential for students to become autonomous, lifelong learners.

The limitations of the research include *the exclusive focus on physical education students, potential bias in research instruments and methods,* and *the exclusive focus on reading ability*. Regarding the exclusive focus on physical education students, it can be said that the study carried out was framed in an absolutely specific context and may allow us to affirm that the same results will be obtained if we try to reproduce them in a different context. Besides, the limitation of the potential bias in the research instruments and plan. It is not possible to affirm that it was only and exclusively the metacognitive reading experiences that made the participants obtain better results in the reading comprehension post-test. Finally, the exclusive focus on reading may leave apart important elements in the teaching and learning process, for example writing abilities.

1. List of figures:

Figure 1.
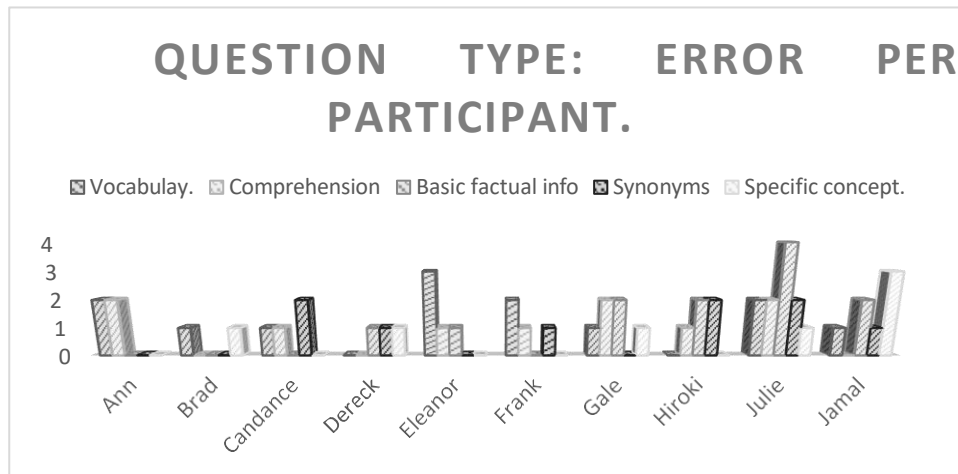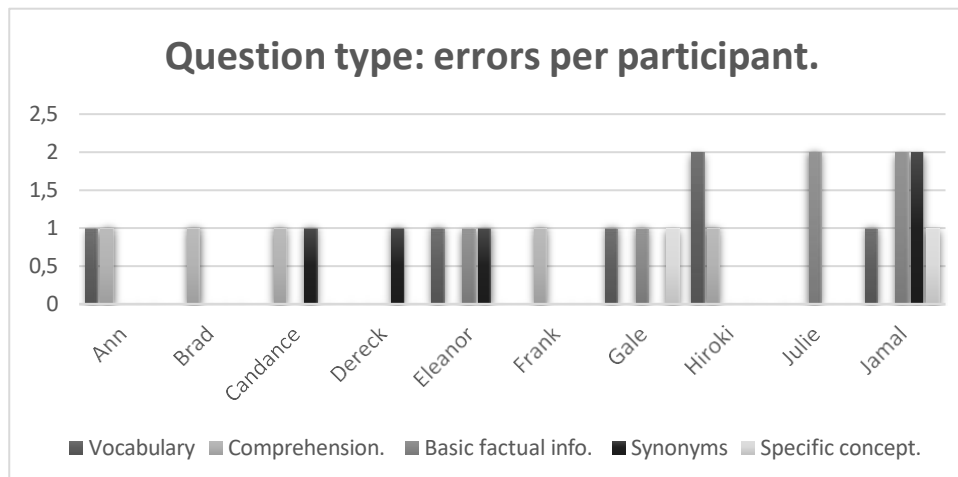
Pre-test results: Question type errors per participant.

Figure 2.

Post-test results: Question type errors per participant

Limitations, Implications, and Further Directions of Research

Studies on foreign language acquisition suggest that addressing emotional barriers could further enhance reading comprehension outcomes. The study's results indicate that while metacognitive reading strategies contributed to improved reading skills, other factors—such as emotional readiness and time management—also played a role. It remains unclear whether the improvements were solely due to metacognitive strategies, as other influences, including the supportive learning environment, likely contributed. Further research on EAL learners' specific challenges with English would provide valuable context for these findings.

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