



MENTAL ENLIGHTENMENT SCIENTIFIC – METHODOLOGICAL JOURNAL

MENTAL ENLIGHTENMENT SCIENTIFIC – METHODOLOGICAL JOURNAL

<http://mentaljournal-jspu.uz/index.php/mesmj/index>



LANGUAGE LEARNING AND TRANSFER: DOES A SIMILAR L1 FACILITATE L2 ACQUISITION?

Gulchehkra Mardonova

Teacher of English Philology Department

Jizzakh State Pedagogical University

E-mail: mardonova-95@list.ru

Jizzakh, Uzbekistan

ABOUT ARTICLE

Key words: Second Language Acquisition (SLA), Contrastive Analysis Hypothesis (CAH), Interlanguage, L1 Transfer, Russian-English Bilingualism, Grammar Acquisition, Error Analysis, Language Pedagogy, Cognitive Mechanisms in SLA, Cross-Linguistic Influence.

Received: 16.05.25

Accepted: 18.05.25

Published: 20.05.25

Abstract: This study explores the influence of a learner's first language (L1) on second language (L2) acquisition through the lens of the Contrastive Analysis Hypothesis (CAH). It examines how linguistic similarities and differences between Russian (L1) and English (L2) impact grammar acquisition and error patterns. Using qualitative research methods, including observations and interviews, a case study was conducted on a female Russian-speaking participant learning English as an L2. Findings reveal that positive transfer facilitates learning when linguistic structures align, while negative transfer leads to persistent grammatical difficulties, particularly with articles, auxiliary verbs, and tense sequencing. These results align with interlanguage theory and Krashen's SLA framework, which suggest that L2 acquisition follows a structured developmental process shaped by L1 influence. The study highlights the effectiveness of contrastive analysis and error analysis in predicting and addressing learners'

difficulties. Targeted instructional activities, such as reading exercises, structured handouts, and real-life applications, contributed to the participant's improvement in L2 competence. The research underscores the pedagogical significance of linguistic comparison in SLA and its role in designing effective teaching strategies. By integrating contrastive analysis and corrective feedback, educators can better address learners' challenges and enhance proficiency.

Introduction

The role of the first language (L1) in second language (L2) acquisition has been widely explored through various linguistic theories. Numerous studies have examined the extent to which L1 influences L2 learning, positioning it as a central factor in second language acquisition (SLA). Linguists have conducted extensive research to analyze the relationship between L1 and L2, aiming to understand how the acquisition process occurs by comparing different linguistic aspects of both languages. One of the most prominent theoretical frameworks for investigating the relationship between L1 and L2 is contrastive analysis. This approach, first introduced by American linguist Robert Lado (1957) states, "individuals tend to transfer the forms and meanings as well as the distribution of forms and meanings of their native language and culture to the foreign language and culture—both productively when attempting to speak the language and to act in the culture, and receptively when attempting to grasp and understand the language and the culture as practiced by native speakers." The Contrastive Analysis Hypothesis (CAH) has played a significant role in SLA research, particularly in identifying areas of linguistic difficulty for L2 learners by comparing language structures. Beyond contrastive analysis, the concept of interlanguage, introduced by Larry Selinker (as cited in McLaughlin, 1987), has been instrumental in understanding L2 acquisition. Interlanguage refers to the dynamic linguistic system that learners develop as they acquire an L2, incorporating elements from both their native language and the target language. Through this process, learners establish a unique linguistic framework, where similarities between L1 and L2 may facilitate comprehension and acquisition, while differences may pose challenges. Additionally, Krashen's theory of SLA

suggests that L2 learning follows a natural progression similar to L1 acquisition, occurring in a predictable order.

The implications of these theoretical perspectives are particularly relevant for language educators, as they offer valuable insights into the mechanisms underlying second language learning. The objective of this research is to examine whether learning an L2 that shares linguistic similarities with the learner's L1 results in a more efficient acquisition process. To investigate this, a case study will be conducted, focusing on a female participant whose L1 is Russian and who is currently acquiring English as an L2. By analyzing the challenges she encounters, and comparing the structural characteristics of Russian and English, this study aims to contribute to a deeper understanding of the role of L1 influence in SLA. The findings will provide practical implications for language instruction, enhancing pedagogical approaches to L2 learning.

Literature Review

This study builds upon existing research that explores the role of the first language (L1) in second language (L2) acquisition, analyzing both the similarities and differences between languages as well as the factors that influence the efficiency of the learning process. Several linguistic theories and empirical studies have sought to determine how L1 facilitates or hinders L2 acquisition, with contrastive analysis serving as one of the most influential frameworks in this field. Contrastive Analysis (CA) emerged as a systematic approach between the 1940s and 1960s to compare the native language (NL) and target language (TL) in order to identify potential learning difficulties. Charles Fries (1945) is credited with developing this approach, emphasizing its fundamental role in second language teaching methodology (Alkhresheh, 2013). According to contrastive analysis, the most effective way to assess the challenges of L2 acquisition is through comparative analysis of L1 and L2 structures. The results of such an analysis suggest that linguistic similarities between the NL and TL facilitate learning, whereas significant structural differences may hinder the process. When L1 and L2 share certain features, learners experience positive transfer, making acquisition relatively effortless. Conversely, when substantial differences exist, learners are more likely to face challenges in mastering the target language. Lado (1957) further elaborated on this idea through the Contrastive Analysis Hypothesis (CAH), which asserts that difficulties in L2 acquisition arise

primarily from structural differences between the L1 and L2. He proposed that learners tend to transfer linguistic forms, meanings, and syntactic structures from their native language to the target language, either facilitating or obstructing their learning. However, not all linguistic differences present equal challenges; instead, they vary in complexity and the degree of difficulty they impose on learners. Positive transfer occurs when similarities between the two languages aid learning, while negative transfer (or interference) results when disparities lead to errors in L2 production. Corder (1967) and Richards (1971) argue that negative transfer represents a particular type of interlanguage error that is not exclusive to any specific L1 but is a common phenomenon among L2 learners.

Stockwell, Bowen, and Marlin (1965) further contributed to contrastive analysis research by developing a model known as the hierarchy of difficulties, which categorizes the degree of linguistic challenges L2 learners may encounter:

- Level 0 – Transfer: No difference or contrast between L1 and L2, leading to direct transfer.
- Level 1 – Coalescence: Two items in the L1 are combined into one item in the L2.
- Level 2 – Underdifferentiation: An item present in L1 is absent in L2.
- Level 3 – Reinterpretation: An existing L1 item is assigned a new function or distribution in L2.
- Level 4 – Overdifferentiation: A completely new item appears in L2 with no equivalent in L1.
- Level 5 – Split: A single item in L1 corresponds to two or more items in L2.

Numerous contrastive analysis case studies on different language pairs have demonstrated that both L1 and L2 learners follow a developmental pattern in their acquisition process. Rod Ellis (1984) examined these developmental orders in greater detail, highlighting three key stages: the silent period, formulaic speech, and structural and semantic simplification. The silent period is characterized by learners primarily listening to the target language and forming an understanding of its structures before attempting production. This stage is widely recognized in both L1 and L2 acquisition. Krashen (1982) supports the notion that the silent period allows learners to develop competence through listening, while Gibbons (as cited in

Ellis, 1994) describes it as a stage of incomprehension, during which learners are still processing the new language.

The second stage, formulaic speech, involves learning commonly used expressions that facilitate communication in specific contexts. Lyons (as cited in Ellis, 1994) defines formulaic speech as the acquisition of set phrases and expressions, which Krashen (1982) argues are essential for conversational fluency. Ellis (1994) further notes that these expressions often consist of memorized scripts, such as greetings and frequently used phrases.

The final stage, structural and semantic simplification, occurs when learners apply simplifications to L2 grammar and vocabulary, often by omitting articles, auxiliary verbs, or content words such as nouns and verbs. Such omissions may occur for two reasons: either the learner has not yet fully acquired the necessary linguistic structures, or they struggle to use them accurately in L2 production.

These three developmental stages indicate that both first and second language learners undergo similar acquisition processes. The notion of linguistic universals, proposed by scholars such as Greenberg (as cited in Ellis, 1994) and Chomsky, further reinforces this idea. Their research sought to identify common linguistic features across different language families, contributing to the broader understanding of universal grammar and its role in L2 acquisition.

Building on these theoretical frameworks, the present study seeks to examine the extent to which linguistic similarities and differences between L1 and L2 affect the ease of acquisition. The findings from this research will contribute to a more comprehensive understanding of second language learning processes and inform instructional strategies to enhance L2 acquisition.

Learner's Profile

For this case study, the selected participant is Khusnora Khudjamova, a Master's student at the National University in Tashkent. She specializes in the Russian language and has consistently demonstrated a strong desire to acquire English with native-like proficiency. At 25 years old, Khusnora obtained her Bachelor's degree last year and has since continued her academic journey with dedication and enthusiasm. She is a highly motivated, ambitious, and hardworking individual who takes education seriously. Additionally, she is bilingual, fluent in both Russian and Uzbek, and is currently advancing her proficiency in English. Khusnora's

interest in learning English dates back to her early years. She initially pursued English for personal satisfaction and began studying the language approximately ten years ago. At that time, the Grammar Translation Method (GTM) was the predominant teaching approach in her classes. This method primarily focused on rote memorization of vocabulary and direct translation exercises between languages. As a result, her learning was largely limited to reading comprehension and vocabulary acquisition. She also engaged in self-directed learning activities, such as singing English songs and reading aloud to improve her pronunciation. However, as she recalled, the traditional classroom environment was teacher-centered, with minimal emphasis on communicative skills. Moreover, listening tasks were not integrated into lessons, which limited her exposure to spoken English.

Recognizing the need for more effective learning strategies, Khusnora later shifted her focus toward acquiring English for academic purposes. She enrolled in intensive English courses where she was exposed to a more interactive and communicative approach. Unlike her earlier learning experience, these courses provided a more immersive environment that facilitated language acquisition. She particularly appreciated that instructors maintained English as the primary medium of instruction, conducted discussion-based activities, and incorporated real-life contexts into lessons. Additionally, Saturday film sessions were organized, during which students watched American movies with subtitles to enhance their listening and speaking skills. Initially, understanding native speakers proved to be a challenge; however, after repeated exposure to the same movie, she observed gradual improvement in her comprehension. Through this approach, she was able to strengthen her listening and reading skills, although she found writing and speaking more challenging.

As her proficiency improved, Khusnora decided to prepare for the IELTS examination, which further refined her English skills. While she has made substantial progress in a relatively short period, this study aims to investigate the influence of her L1 (Russian) on her L2 (English). The research will explore linguistic similarities and differences between the two languages and identify the specific challenges she has encountered throughout her learning process. By analyzing these factors, this study seeks to provide insights into the extent to which linguistic transfer occurs and how it impacts second language acquisition.

Research Design

This study employs a qualitative (exploratory) research approach, which involves gathering and analyzing textual, visual, and audio data to explore concepts, opinions, and experiences. Qualitative research is particularly useful for generating new insights, as it allows for an in-depth examination of the research problem. The most commonly used data collection methods in qualitative research include observations, interviews, and focus groups. In this study, observation and interviews were utilized to identify similarities and differences between Russian and English and to investigate the challenges encountered in second language acquisition.

As the researcher, I began by observing my participant's L2 acquisition process while simultaneously taking notes to document her strengths and weaknesses. This observational phase allowed me to formulate well-structured interview questions tailored to her specific learning experiences. Over the course of a week-long observation, I identified that the grammatical structures of English and Russian exhibit notable similarities, which likely facilitated the participant's rapid development of grammatical competence within a few months. Following this initial observation, I conducted a series of one-on-one interviews to gain deeper insights into the participant's experiences and the challenges she continues to face. Individual interviews proved to be an effective method, as they created a comfortable environment in which the participant could express herself clearly and confidently. The first phase of the interview focused on fundamental questions regarding the participant's L2 learning journey, including the "what," "where," and "how" aspects of her experience. During this discussion, she identified grammatical difficulties related to the use of articles and the verb "to be", which were initially challenging due to negative transfer from her native language. Specifically, she frequently omitted articles and the verb "to be" in sentences, producing errors such as "I student" or "We friends" instead of "I am a student" and "We are friends." However, after engaging in targeted practice activities, she was able to use these grammatical elements correctly. In terms of syntactic structure, both English and Russian share the SVO (Subject-Verb-Object) pattern—for example, "I go to school every day" in English corresponds to "Я хожу в школу каждый день" in Russian. This structural similarity suggests that Russian-speaking learners may experience positive transfer, which facilitates the acquisition of English syntax. However, despite this advantage, the participant reported ongoing difficulties with the

sequence of tenses in reported speech. To assess this issue, I asked her to transform the direct speech sentence "John says: 'I have worked in an international company.'" into indirect speech. Her response, "John said that he has worked in an international company," indicated an incorrect tense shift. To address this challenge, I provided structured practice exercises, including a handout with direct-to-indirect speech transformations.

Following the initial interview, I implemented targeted instructional activities to enhance the participant's understanding of indirect speech. Based on extensive research, I identified reading-based activities as a particularly effective method. These activities included in-class reading comprehension tasks and out-of-class oral interpretation exercises. Since the participant was my roommate, I was able to incorporate language practice into everyday interactions. For instance, while engaging in daily activities, I encouraged her to report statements made by shop assistants or waiters, reinforcing her ability to use reported speech in real-life contexts. Whenever errors occurred, I provided immediate corrective feedback. Additionally, I designed a reading comprehension task in which she read three passages and then summarized each one in the third-person singular, adhering to reported speech conventions. Over time, this approach not only improved her grammatical accuracy but also enhanced her speaking skills. During the next phase of the interview, the participant identified another grammatical challenge: the use of modal verbs. While both Russian and English employ modal verbs, their meanings and usage differ significantly. In English, modals such as "must," "should," and "can" have distinct functions—"must" expresses obligation, "should" is used for giving advice, and "can" indicates ability. However, in Russian, modal verbs often have overlapping meanings, which led to interference errors in the participant's English usage. For instance, she incorrectly used "must not" instead of "need not" in the sentence "There are plenty of apples in the fridge. You must not buy any."

To address this issue, I designed interactive learning activities that provided contextualized practice with modal verbs. Two key activities "Travel Tips" and "Asking for Directions"—were implemented. In the first activity, the participant analyzed a travel document containing modal verbs and highlighted their functions within the text. In the second activity, she completed a handout in which she was required to give appropriate directions using the correct modal verbs. Throughout these exercises, I provided real-time explanations

and corrective feedback, ensuring that she developed a more precise understanding of modal verb usage.

The final stage of the research involved a concluding interview, in which the participant reflected on her learning experience. She expressed that the instructional activities were highly beneficial, as they provided structured input that enhanced her comprehension and application of English grammar. Additionally, she noted that the real-life contextual practice helped solidify her understanding of complex linguistic concepts.

Overall, this research highlights the significant role of L1 transfer in L2 acquisition and demonstrates how targeted intervention strategies can effectively address linguistic challenges. The findings of this study contribute to a deeper understanding of cross-linguistic influence and emphasize the importance of contextualized learning approaches in second language acquisition

Data Collection and Findings

Upon completion of the instructional activities, data was collected through a series of observations and interviews to analyze the participant's second language (L2) acquisition. The findings are categorized into two sections: data analysis from observation and data analysis from interviews.

Data Analysis from Observation

During a week-long observation, several linguistic challenges were identified in the participant's L2 production, particularly in speaking skills. The participant expressed dissatisfaction with her grammatical competence, which she believed hindered her ability to communicate fluently. As a result, she enrolled in online English classes that focused on grammar instruction. The teaching approach employed in these classes was based on the Contrastive Analysis Hypothesis (CAH), a method introduced by Charles Fries, who described it as "an integral component of the methodology of foreign language teaching" (Alkhresheh, 2013). This method facilitates the identification of similarities and differences between the learner's first language (L1) and second language (L2), allowing for an assessment of language transfer effects (Johnson, 1999).

The Contrastive Analysis Hypothesis posits that when an L1 and L2 share linguistic similarities, language acquisition tends to be more successful due to positive transfer. This

hypothesis was supported by the participant's experience, as she was able to use similar syntactic constructions in English and Russian, which facilitated her grammatical development. However, the differences between the two languages resulted in language interference, leading to persistent errors. Observational data confirmed that no two languages are entirely identical, and the process of acquiring a new language inherently involves comparing and contrasting it with the learner's native language. Additionally, the observation highlighted that grammar and lexicology in Russian and English exhibit notable similarities, which benefited the participant's learning process. Nonetheless, frequent interference errors were observed, particularly in areas where Russian and English differ significantly. This finding underscores the complex interplay between linguistic similarities and differences in L2 acquisition.

Data Analysis from Interviews

The interview series provided further insights into the participant's English learning journey. In the initial interview, the participant described her language learning history, stating that she had been studying English intensively for two years, though she had previously attended English courses during her school years. At the early stages of her education, the Grammar Translation Method (GTM) was predominantly used, with a primary focus on grammatical accuracy and translation exercises. However, as the demand for English proficiency increased, the Direct Method gradually replaced GTM. This new approach emphasized target language immersion, where the teacher conducted lessons primarily in English. The participant noted that both methods contributed to her grammatical development, as they involved comparing English and Russian structures, which helped minimize confusion. Despite these advantages, the participant encountered significant challenges in acquiring specific grammatical concepts that do not exist in Russian, such as articles and the verb "to be." Initially, she struggled with omitting articles and auxiliary verbs in sentences due to the absence of these grammatical features in her L1. However, after extensive practice using drilling techniques, she successfully integrated these elements into her speech and writing. When asked about her current linguistic challenges, the participant identified Indirect Speech as one of her major difficulties. Although she had previously studied this concept, she struggled to apply it accurately, particularly in tense sequencing. To assess her proficiency, she was asked to transform the following sentences from direct to indirect speech:

- ✓ Direct Speech: "They say: 'We take a bus to work.'"
- ✓ Participant's Response: "They said they take a bus to work." (Incorrect)
- ✓ Direct Speech: "John said: 'I will fly to Florida tomorrow.'"
- ✓ Participant's Response: "John said that he will fly to Florida tomorrow." (Incorrect)

Her responses revealed errors in tense backshifting, indicating a lack of awareness regarding sequence of tenses. To address this issue, she was given a written assignment in which she had to convert a series of direct speech statements into indirect speech. The results were unsatisfactory, as she consistently failed to apply the appropriate tense shifts.

Instructional Interventions

To support the participant's acquisition of Indirect Speech, two targeted activities were introduced:

1.Out-of-Class Activity: Oral Interpretation of Spontaneous Speech

- ✓ The participant was placed in real-life communicative situations where she had to report people's statements using Indirect Speech.
- ✓ Initially, she continued making the same tense sequencing errors, but through immediate corrective feedback, she gradually improved.
- ✓ The participant found this activity highly beneficial, as it not only reinforced her grammatical accuracy but also contributed to her speaking fluency by incorporating daily conversations into language practice.
- ✓ 2.In-Class Activity: Reading and Retelling Passages
- ✓ The participant was given three reading passages and was instructed to retell them using Indirect Speech in third-person singular.
- ✓ Compared to previous exercises, she made fewer mistakes, demonstrating noticeable improvement.
- ✓ Continuous feedback and error analysis further reinforced her understanding of tense shifts in reported speech.

These interventions significantly enhanced her grammatical competence, confirming that contextualized learning activities promote effective language acquisition.

Teaching Modal Verbs

Following the reported speech exercises, the next instructional focus was on modal verbs, an area where the participant experienced moderate difficulty. While both Russian and English use modal verbs, their meanings and functions differ, leading to negative transfer errors.

For instance, the participant misused “must not” instead of “need not” in the sentence:

- Incorrect: “There are plenty of apples in the fridge. You must not buy any.”
- Corrected Version: “There are plenty of apples in the fridge. You need not buy any.”

To address this issue, two interactive activities were implemented:

1. “Travel Tips” Activity
 - The participant analyzed a travel-related document containing multiple modal verbs and highlighted their contextual meanings.
2. “Asking for Directions” Activity
 - She was provided with a handout that required her to give directions using appropriate modal verbs.
 - Unlike Indirect Speech, she performed well in these exercises, as most modal verb meanings in Russian closely align with their English counterparts.

Conclusion

This case study explored the influence of a learner’s first language (L1) on second language (L2) acquisition through the framework of the Contrastive Analysis Hypothesis (CAH). The findings underscore the linguistic challenges faced by Russian learners of English while highlighting the critical role of L1 transfer in shaping their L2 learning trajectories.

The study reaffirms that native language structures significantly impact the acquisition of a target language, functioning both as a facilitating factor and a source of interference. Through contrastive analysis, researchers can systematically identify areas where positive transfer aids L2 acquisition and where negative transfer leads to persistent errors. The results align with existing research, demonstrating that syntactic similarities between Russian and English promote more efficient language acquisition, while structural differences—particularly in articles, auxiliary verbs, and tense sequencing—pose substantial difficulties for learners.

The application of CAH methodology in second language acquisition research has proven to be an effective tool in diagnosing L1-induced learning difficulties. Comparative linguistic analysis enables educators to anticipate potential challenges and design targeted instructional strategies that address learners' specific needs. Given its historical significance in the field of Second Language Acquisition (SLA), CAH remains a valuable framework for understanding cross-linguistic influence and its implications for L2 pedagogy.

Furthermore, the individualized instructional approach, incorporating reading materials, structured handouts, and interactive activities, proved highly effective in reinforcing grammatical concepts. Carefully curated materials enhanced learner engagement, fostering active participation and improving retention of L2 structures. Additionally, contrastive analysis and error analysis provided a more precise understanding of how L1 influences L2 acquisition, allowing for more effective pedagogical interventions.

James (1980) posits that contrastive analysis can help determine whether an observed error stems from L1 transfer or other interlanguage influences. Supporting this perspective, he argued that understanding linguistic similarities between L1 and L2 can facilitate the structured progression of interlanguage development, guiding learners from simple to more complex linguistic features. Despite its limitations, contrastive analysis continues to serve as a valuable pedagogical tool, offering insights into second language instruction and acquisition.

With regard to language transfer, L1 can exert both positive and negative influences, necessitating ongoing research in contrastive analysis to further examine the structural relationships between different languages in terms of grammar, lexicology, syntax, and morphology. Such research can assist educators in developing more effective teaching materials tailored to learners' specific linguistic backgrounds. However, it is crucial that instructors avoid reinforcing stereotypes or penalizing students for not achieving a native-like accent. In the modern era, English is widely recognized as a global lingua franca ("Globish"), where diverse accents are accepted and normalized.

Additionally, several extralinguistic factors, including age, aptitude, learning strategies, personality, and motivation, play a pivotal role in L2 acquisition and can influence both the learning process and the challenges encountered. While learners inevitably make errors in L2

production, instructors should focus on providing constructive corrective feedback, which serves to enhance language input and mitigate the risk of fossilization.

In conclusion, based on the findings of this study, Russian-speaking learners tend to acquire English with relative ease due to structural similarities between the two languages. However, specific grammatical challenges persist, underscoring the importance of contrastive analysis in language instruction. By integrating comparative linguistic approaches and targeted pedagogical strategies, educators can enhance L2 proficiency and optimize learning outcomes for Russian learners of English.

References:

- [1]. Facione, P. A. (2011). Critical Thinking: What It Is and Why It Counts. Insight Assessment.
- [2]. Paul, R., & Elder, L. (2006). Critical Thinking: Tools for Taking Charge of Your Learning and Your Life. Pearson.
- [3]. Ennis, R. H. (1989). Critical thinking and subject specificity: Clarification and needed research. *Educational Researcher*, 18(3), 4-10.
- [4]. Vygotsky, L. S. (1978). *Mind in Society: The Development of Higher Psychological Processes*. Harvard University Press.
- [5]. Anderson, L. W., & Krathwohl, D. R. (2001). *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*. Longman.
- [6]. Yang, Y. C., & Gamble, J. (2013). Effective questioning strategies in ESL classrooms. *TESOL Quarterly*, 47(1), 1-25.
- [7]. Fahim, M., & Komijani, A. (2010). Critical thinking and writing quality. *Journal of Critical Thinking*, 8(2), 65-78.
- [8]. Zarei, A. A., & Haghgoo, A. (2012). The relationship between critical thinking and speaking ability of Iranian EFL learners. *Journal of Language Teaching and Research*, 3(4), 608-614.
- [9]. Hmelo-Silver, C. E. (2004). Problem-based learning: What and how do students learn? *Educational Psychology Review*, 16(3), 235-266.
- [10]. Gokhale, A. A. (1995). Collaborative learning enhances critical thinking. *Journal of Technology Education*, 7(1), 22-30.

[11]. Johnson , R. T., & Johnson, D. W. (1986). Action research: Cooperative learning in the science classroom. Science and Children.

[12]. Totten , S., Sills, T., Digby, A., & Russ, P. (1991). Cooperative learning: A guide to research . New York: Garland.

[13]. Flavell, J. H. (1979). Metacognition and cognitive monitoring. American Psychologist, 34(10), 906-911.

[14]. Hmelo-Silver, C. E. (2004). Problem-based learning: What and how do students learn? Educational Psychology Review, 16(3), 235-266.

[15]. Silvia F. Rivas, Carlos Saiz, Carlos Ossa. 2022. Metacognitive Strategies and Development of Critical Thinking in Higher Education.