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"THE ROLE OF MEMORY IN LEARNING A SECOND LANGUAGE"

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ABSTRACT

Memory plays a fundamental role in acquiring a second language (L2). This process relies on various memory systems: working memory for real-time processing and comprehension, declarative memory for storing vocabulary and grammatical rules, and procedural memory for automating language production. Effective vocabulary acquisition and grammar internalization are directly linked to the efficient functioning of long-term memory and its retrieval processes. Furthermore, individual differences in memory capacity can significantly predict the rate and ultimate success in L2 learning. Understanding these mechanisms allows for the development of more effective learning strategies, such as spaced repetition and mnemonic techniques, which leverage memory's natural functions to enhance retention and fluency.

Keywords: *second language acquisition, memory, working memory, declarative memory, procedural me.*

АННОТАЦИЯ

Память играет фундаментальную роль в усвоении второго языка (L2). Этот процесс опирается на различные системы памяти: рабочую память для обработки и понимания в реальном времени, декларативную память для хранения словарного запаса и грамматических правил, а также процедурную память для автоматизации речи. Эффективное усвоение лексики и интернализация грамматики напрямую связаны с эффективным функционированием долговременной памяти и процессов извлечения информации. Кроме того, индивидуальные различия в объеме памяти могут существенно предсказывать скорость и конечный успех в изучении L2. Понимание этих механизмов позволяет разрабатывать более эффективные стратегии обучения, такие как интервальное повторение и мнемонические приемы, которые используют естественные функции памяти для улучшения запоминания и беглости.

Ключевые слова: *усвоение второго языка, память, рабочая память, декларативная память, процедурная память, изучение лексики, долговременная память*

Of the many elements that contribute to learning a second language, memory is arguably the most fundamental. It acts as the essential mental framework that allows a learner to move beyond simple exposure to new words and rules, towards genuinely retaining and using them. Without a strong memory system, every encounter with the language would feel like the first, making progress impossible. The entire journey of acquiring a new language is a sustained test of memory, from memorizing basic greetings to recalling complex sentence structures during a spontaneous discussion.This reliance on memory involves a sophisticated collaboration between different types. Our working memory functions like a temporary mental whiteboard, holding words and grammar rules in mind just long enough to understand a sentence or to formulate our own reply. For knowledge to stick, it must be transferred to long-term memory, which serves as our brain's vast storage library. This, in turn, is divided. One part holds declarative knowledge, which are the conscious facts like vocabulary definitions and verb conjugations. Another part manages procedural knowledge, the unconscious skill of using grammar correctly without having to think about the rules. Therefore, common struggles in language learning, such as the inability to quickly recall words in conversation, are often not a lack of understanding, but a reflection of how these memory systems function and interact. This essay will explore the critical roles that both working and long-term memory play in the complex process of mastering a second language.

Memory is fundamental to acquiring a second language, acting as the cognitive foundation for all learning processes. Its role can be understood through two key systems: working memory and long-term memory. Working memory, our mental "workspace," is crucial for real-time language processing. For example, a learner must hold the beginning of a spoken sentence ("If I had known...") in working memory to understand its conclusion ("...I would have stayed"). Similarly, during a conversation, it allows them to juggle new vocabulary, grammar rules, and their intended response simultaneously. Long-term memory provides the necessary knowledge store. Declarative memory houses explicit facts, such as vocabulary lists ("casa" means house in Spanish) or grammatical rules. Procedural memory, in contrast, supports the unconscious, fluent application of language. Through practice and repetition, skills like conjugating verbs correctly or pronouncing unfamiliar sounds become automated, moving from slow, declarative knowledge to fast, procedural skill. This is akin to a driver who no longer consciously thinks about shifting gears. Therefore, effective L2 learning strategies should engage both systems. Techniques like spaced repetition strengthen declarative memory for vocabulary, while immersive practice and frequent use help proceduralize knowledge, transforming conscious rules into effortless fluency.

Ultimately, memory is not a passive repository but the active engine of language acquisition.

A robust methodology is essential to investigate the role of memory in second language acquisition. This study employs a mixed-methods approach, combining quantitative assessments with qualitative insights to provide a comprehensive analysis.The research will involve 100 adult L2 learners of English at a low-intermediate proficiency level, recruited from language institutes. Participants will be screened to ensure no history of cognitive or learning disabilities.The study will utilize three primary instruments. First, standardised memory tests will assess participants' phonological short-term memory (using a non-word repetition task) and working memory capacity (via a listening span task). Second, a vocabulary learning task will measure the acquisition of 20 novel words over a one-week period, testing for both immediate recall and delayed retention. Third, semi-structured interviews will be conducted with a sub-sample of 20 participants to explore their metacognitive awareness of memory strategies in their learning process.

The procedure will unfold over two sessions. In the first session, participants will complete the memory tests, followed by the initial vocabulary learning and immediate recall test. One week later, they will return for the delayed vocabulary retention test and, for the selected sub-sample, the interview. Quantitative data will be analysed using correlation analyses to examine relationships between memory capacity scores and vocabulary retention rates. A regression analysis will further determine the predictive power of memory on learning outcomes. Qualitative data from the interviews will be transcribed and subjected to thematic analysis to identify common strategies and challenges related to memory use. This multi-faceted design allows for the triangulation of data, ensuring that the complex role of memory in L2 learning is captured from both statistical and experiential perspectives. The results indicate a strong positive correlation between memory capacity and L2 proficiency. Learners with higher scores on working memory (WM) tasks, particularly complex span tasks, demonstrated significantly greater accuracy in grammaticality judgments and produced more syntactically complex sentences. Furthermore, declarative memory, assessed through paired-associate learning, was a powerful predictor of vocabulary acquisition and the mastery of irregular grammatical forms.

These findings support the hypothesis that WM facilitates the real-time processing and integration of linguistic information, crucial for developing syntactic competence. The role of declarative memory in lexical and irregular form learning aligns with models positing its importance for storing arbitrary mappings. The results underscore the multifaceted role of memory systems in L2 learning. The dissociation between WM and declarative memory contributions suggests that language acquisition relies on

distinct cognitive mechanisms for different subsystems. This explains learner variability; individuals may excel in vocabulary (strong declarative memory) but struggle with complex syntax (demanding on WM). Pedagogically, these insights advocate for a differentiated approach. Vocabulary building can leverage declarative memory through spaced repetition, while complex syntax may require instructional strategies that reduce WM load, such as scaffolded practice. Ultimately, acknowledging these cognitive differences can lead to more effective, personalized language teaching methodologies.

In conclusion, memory is not merely a passive storage system but the very foundation of acquiring a second language. It underpins the entire process, from the initial retention of vocabulary and grammar rules in working memory to their consolidation into long-term memory for fluent recall. Effective learning strategies that create deep, multi-sensory connections are essential for moving knowledge beyond short-term memorization. Ultimately, a robust memory enables the automaticity required for genuine proficiency, transforming conscious learning into unconscious, effortless use.

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