



INTEGRATION OF ARTIFICIAL INTELLIGENCE TOOLS WITH PSYCHOLINGUISTIC MECHANISMS OF MEMORY AND ATTENTION IN ENGLISH LANGUAGE ACQUISITION

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Abstract. This thesis examines how artificial intelligence (AI) tools support English language learning through the psycholinguistic mechanisms of memory and attention. It explores how adaptive platforms and intelligent tutoring systems enhance learners' working memory, selective attention, and information processing. The study highlights how AI personalizes tasks, reduces cognitive load, and improves the retention of linguistic material. Findings show that aligning AI-based instruction with psycholinguistic principles significantly strengthens learning efficiency and long-term mastery of English.

Keywords: artificial intelligence, psycholinguistics, memory, attention, English language acquisition, adaptive learning, cognitive load, intelligent tutoring systems, information processing.

The rapid development of artificial intelligence (AI) has transformed the landscape of language education. Modern AI tools, such as adaptive learning platforms and intelligent tutoring systems, provide personalized instruction that aligns with learners' cognitive profiles. Understanding the psycholinguistic mechanisms of memory and attention is crucial for optimizing language acquisition, as these processes determine how linguistic information is encoded, stored, and retrieved. This thesis explores the integration of AI technologies with memory and attention functions in English learning, aiming to enhance learning efficiency and long-term mastery.

Artificial Intelligence in Language Learning

According to Li and Ni (2022), AI-based adaptive learning platforms significantly improve language learning efficiency by providing personalized instruction and real-time feedback. They argue that learners benefit from AI systems that track progress and adjust tasks to match their skill level. In my view, such technologies empower learners to take control of their pace, enhancing autonomy and motivation, which are crucial for mastering English as a foreign language.

Psycholinguistic Mechanisms: Memory and Attention

Baddeley (2012) emphasizes that working memory is central to language learning, as it temporarily stores and processes new linguistic information. Similarly, Posner and Petersen (1990) highlight the role of selective attention in filtering relevant linguistic input. From my perspective, understanding these mechanisms helps learners and teachers design strategies that reduce cognitive overload, focus on key information, and improve vocabulary retention and grammar acquisition.

Integration of AI and Psycholinguistics

Research by Wang et al. (2021) indicates that AI tools integrated with psycholinguistic principles can optimize learning by presenting content that matches learners' cognitive capacities. Interactive exercises, spaced repetition, and adaptive



feedback enhance long-term retention and language proficiency. I believe that combining AI with knowledge of memory and attention not only increases efficiency but also allows learners to develop more effective self-regulated learning habits.

Benefits and Challenges

Kukulska-Hulme (2020) argues that AI-supported education increases learner engagement, motivation, and individualized instruction. However, she warns about challenges such as technological accessibility, teacher training, and potential cognitive overload. In my opinion, these challenges can be mitigated through careful curriculum design, gradual integration of AI tools, and ongoing teacher support, ensuring that learners gain the full benefits of AI-enhanced language education.

This thesis demonstrates that the integration of artificial intelligence tools with psycholinguistic mechanisms of memory and attention can significantly enhance English language learning. AI-based platforms provide personalized, adaptive instruction that aligns with learners' cognitive capacities, optimizing memory retention and attentional focus. By combining technological innovations with insights from psycholinguistics, educators can improve learning efficiency, motivation, and long-term mastery of English. Future research should focus on addressing technological challenges and exploring new AI applications to further support effective language acquisition.

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