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STUDYING EFFECTIVE FOREIGN LANGUAGE LEARNING STRATEGIES TO OPTIMIZE THE COGNITIVE MECHANISMS OF THE ADULTS

Abstract. Language learning is a complex process that involves various cognitive mechanisms such as memory, attention, executive functions and motivation. In order to use a language effectively in real-life situations, adults need to develop not only their linguistic competence but also their communicative competence, which includes the ability to use language appropriately and effectively in different social contexts. To achieve this, language learners must be able to employ effective learning strategies that can enhance their motivation, attention, memory, and communication skills.

This article aims to explore the relationship between language learning strategies and the development of motivation, attention, memory capacity, and communicative competence among adults. The study analyzes learning strategies and cognitive mechanisms, and identifies the most effective strategies for enhancing these cognitive abilities in language learners.

The importance of motivation in language learning, and how the use of specific strategies such as goal setting, self-regulation, and positive reinforcement can enhance motivation levels among learners are discussed in the research. It also explores the role of attention in language learning, and how strategies such as selective attention and elaboration can improve learners' ability to process and retain linguistic information.

The study delves into the role of memory in language learning, and how strategies such as repetition, visualization, and association can enhance learners' memory capacity and retrieval. The article examines the importance of communicative competence in language learning, and how strategies such as interaction, feedback, and negotiation of meaning can improve learners' ability to use language effectively in different social contexts.

The findings suggest that the use of effective language learning strategies can significantly contribute to the development of motivation, attention, perception, memory, and communicative competence among adult learners. The article highlights the need for language teachers and educators to incorporate these strategies into their teaching practices, and to provide learners with the necessary support and guidance to develop their cognitive abilities and achieve success in language learning.

Keywords: memory, attention, communicative competence, motivation, foreign language.

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ВИВЧЕННЯ ЕФЕКТИВНИХ СТРАТЕГІЙ ВИВЧЕННЯ ІНОЗЕМНИХ МОВ ДЛЯ ОПТИМІЗАЦІЇ КОГНІТИВНИХ МЕХАНІЗМІВ У ДОРΟΣЛИХ

Анотація. Вивчення мови є складним процесом, який включає різноманітні когнітивні механізми, такі як пам'ять, увага та мотивація. Для ефективного використання мови в реальних життєвих ситуаціях дорослим потрібно розвивати не тільки свою лінгвістичну компетенцію, але й комунікативну, яка включає здатність використовувати мову належним чином та ефективно в різних соціальних контекстах. Для досягнення позитивних цілей всім, хто вивчає іноземну мову потрібно використовувати ефективні стратегії навчання, які можуть покращити мотивацію, увагу, пам'ять та комунікативні навички учнів.

Ця стаття має на меті дослідити взаємозв'язок між стратегіями навчання мови та розвитком мотивації, уваги, пам'яті та комунікативної компетентності серед дорослих. У дослідженні проаналізовано стратегії навчання мов і когнітивні механізми, також визначено найбільш ефективні стратегії для покращення когнітивних здібностей у вивченні мови.

У дослідженні розглядається важливість мотивації у вивченні мови та використання певних стратегій, таких як постановка цілей, саморегуляція та позитивне ставлення, може підвищити рівень мотивації серед учнів та студентів. Також досліджується роль уваги у вивченні мови, а також стратегії, такі як селективна увага та співпраця, можуть покращити вміння учнів обробляти та запам'ятовувати лінгвістичну інформацію.

Розглянуто роль пам'яті у вивченні мови та те, як стратегії, такі як повторення, візуалізація та асоціація, можуть підвищити потужність та відновлення пам'яті учнів. Стаття досліджує важливість комунікативної

компетенції у вивченні мови та стратегії, такі як взаємодія, зворотний зв'язок та здатність вести бесіду, які можуть покращити уміння тих, що навчаються, ефективно використовувати мову в різних соціальних контекстах.

Висновки свідчать, що використання ефективних стратегій вивчення мови може значно сприяти розвитку мотивації, уваги, пам'яті та комунікативної компетенції серед студентів. У статті зазначено, щоб вчителі іноземних мов та педагоги включали ці стратегії до своїх практик навчання, забезпечували учнів необхідною підтримкою та керівництвом для розвитку їх когнітивних здібностей та досягнення успіху у вивченні іноземної мови.

Ключові слова: пам'ять, увага, комунікативна компетенція, мотивація, іноземна мова.

Statement of the problem. The cognitive mechanisms that affect foreign language learning are a highly topical area of research in the field of cognitive psychology and linguistics. This is because learning a foreign language is becoming increasingly important in a globalized world where cross-cultural communication is essential for social and economic success.

Research in this area has shown that cognitive factors such as working memory, attention, and executive function play a significant role in foreign language learning. Given the significance of foreign language learning in the modern world, it is likely that research on cognitive and affective mechanisms that affect foreign language learning will continue to be a popular and important area of investigation in the years to come.

It is also should be noted that the communicative competence refers to the ability to use language appropriately and effectively in social contexts. It involves not only knowledge of grammar and vocabulary but also an understanding of the cultural and social norms that govern language use. Language learners need to acquire communicative competence to be able to communicate effectively in the target language. Without it, learners may find themselves unable to express themselves clearly or understand the messages conveyed by others.

Overall, foreign language learning among adults requires the coordinated functioning of several cognitive mechanisms. By understanding these mechanisms, language teachers and learners can develop effective learning strategies that optimize their learning outcomes.

Analysis of the latest research and publications. Foreign language learning among adults involves several cognitive mechanisms that enable the acquisition of a new language. These mechanisms include attention, memory, perception, executive functions and communication competence.

Among the authors, who contributed to the research of the relationship between bilingualism, attention, cognitive control and explained how attention plays a critical role in the effective use of language learning strategies, particularly in the context of self-regulated learning, are M. T. Ullman [9], R. Schmidt, E. Bialystok [13], E. K. Horwitz [11], J. Truscott.

Special attention should be paid to such authors who have conducted research on cognitive mechanisms in foreign language learning, as S. Gass [1], studied the acquisition and retention of vocabulary in second language learning; O. Vasylets[8], R. DeKeyser [5], N. Schmitt, R. Ellis conducted research on the role of implicit and explicit learning in language acquisition and the role of attention and working memory in language learning

The authors M. Satori [6], A. D. Baddeley [2], M. B. Wesche [3], D. Z. Hambrick [4], R. W. Engle [4] dedicated their studies to verbal memory capacity in the process of teaching foreign language among higher education students.

The works and studies by such linguists as M. Bygate [14], P. Robinson [16] M. Swain [14], P. Skehan [14] have contributed significantly to the development of communicative competence in foreign language learning and have helped shape language teaching methodology in the 21st century.

The purpose of the article is to discover the language learning strategies that develop motivation, attention, memory and communicative competence as an important factor that contributes to using the language effectively among the adults in real life situations.

Presentation of the main research material. Learning a foreign language is a complicated process that requires various cognitive mechanisms to work together effectively. Attention, memory, perception, and executive functions all play critical roles in language learning. Attention enables learners to focus on relevant aspects of the language, while memory processes help store and retrieve information related to the new language. Perception allows learners to distinguish between different sounds and speech patterns, while executive functions, such as cognitive flexibility and inhibitory control, help learners adapt to new language rules and suppress unwanted information. In this article, we will explore how these cognitive mechanisms interact and support foreign language learning. We will delve deeper into the importance of attention, memory, perception, and executive functions in language learning and provide strategies to improve these cognitive mechanisms to enhance foreign language learning [1; 2; 3; 4; 5].

Attention plays a critical role in foreign language learning, as it allows learners to focus on relevant aspects of the language, such as grammar, syntax, and vocabulary. Attentional processes also help learners to detect and process sounds and speech patterns that are distinct from their native language.

Memory is another crucial cognitive mechanism involved in foreign language learning. Memory processes help learners to store and retrieve information related to the new language, such as new words and phrases. Working memory, in particular, plays a crucial role in language learning, as it enables learners to hold information temporarily and manipulate it in their minds [6; 7; 8].

Perception is also important in foreign language learning, as it allows learners to distinguish between different sounds and speech patterns in the new language. This involves the ability to perceive and discriminate sounds that are not present in the learner's native language.

Executive functions are another set of cognitive mechanisms that play a role in foreign language learning. These include cognitive flexibility, inhibitory control, and working memory. Cognitive flexibility is essential for adapting to new language rules and structures, while inhibitory control helps learners to suppress unwanted or distracting information. Working memory, as mentioned earlier, is necessary for holding and manipulating information related to the new language. For example, the individuals with better working memory are better able to process and retain new vocabulary and grammar rules. Attentional control is essential for focusing on and processing linguistic input, while executive function is necessary for planning, organizing, and monitoring language learning activities.

Several studies [1; 2; 4; 6;] have shown in their works that memory capacity is an important cognitive ability that plays a critical role in a wide range of academic tasks, including language learning. Foreign students who are learning English as a second language often face challenges in comprehending and understanding audio recordings due to language barriers. However, studies have shown that memory capacity can aid foreign students in this process by facilitating the encoding, storage, and retrieval of information.

Memory capacity refers to the ability to retain and recall information over time. It can be measured using a variety of cognitive tests, including digit span, verbal fluency, and spatial memory tasks. Studies have singled out that individuals with higher [2; 3; 4] memory capacity perform better on tasks that require information processing, learning, and problem-solving skills, all of which are essential for language learning.

In the context of audio recordings, memory capacity can aid foreign students in multiple ways. First, memory capacity facilitates the encoding of auditory information into long-term memory. When listening to audio recordings, foreign students must pay attention to the spoken words and phrases, process their meanings, and integrate them into their existing knowledge base. Individuals with higher memory capacity are better able to perform these tasks, as they can retain more information in working memory and transfer it to long-term memory more efficiently.

Second, memory capacity plays a crucial role in the storage and retrieval of information. After encoding the auditory information, foreign students must retain it in long-term memory for later use. When retrieving information from memory, individuals with higher memory capacity can access a larger pool of stored information and process it more quickly and accurately. This is particularly important for language learning, as students must retrieve previously learned vocabulary, grammar rules, and sentence structures when listening to audio recordings.

Third, memory capacity can aid foreign students in comprehending and understanding the context of audio recordings. Language learning requires students to understand the cultural, social, and historical contexts in which language is used.

Individuals with higher memory capacity are better able to process and store information about these contexts, which can aid them in interpreting and understanding the meaning of audio recordings [2, P.830].

So, memory capacity plays a critical role in foreign students' ability to comprehend and understand English audio recordings. By facilitating the encoding, storage, and retrieval of information, memory capacity can help students process and integrate new language information more efficiently. To improve language learning outcomes, educators should consider incorporating memory-enhancing strategies into their teaching practices, such as repetition, chunking, and visualization techniques. [3, p.25-29]

Among the authors who have conducted research on cognitive mechanisms in foreign language learning is Ellen Bialystok [13] who has conducted extensive research on the relationship between bilingualism, executive function, and cognitive development. Another linguist, Susan Gass [1], also has researched second language acquisition and the role of attention and working memory in language learning. Robert DeKeyser[5] dedicated his research to the role of implicit and explicit learning in language acquisition. Research on second language acquisition, including the role of attention, input, and output in language learning has been done by Rod Ellis[15]. Such philologists as O.Vasylets, R. Gilabert outlined that the best foreign language acquisition is performed when the mode and task complexity are interrelated to produce the effect on language learning, also they deeply researched the role of cognitive strategies in foreign language learning as it was highlighted in the article [7;8].

Taking into consideration the conducted research on various aspects of verbal memory capacity and its impact on foreign language learning among higher education students, we focus our special attention on the works that provide insights into the cognitive mechanisms involved in language learning and suggest ways to enhance language acquisition outcomes by improving working memory capacity.

The task of our investigation is to check the memory capacity of students in the process of learning English as a foreign language can be useful for educators to identify individual differences and tailor their teaching approach accordingly. Here we suggest are some tasks that can help check memory capacity among students:

1. Digit span test: This is a classic test of memory capacity, where students are asked to repeat a sequence of digits in the same order they were presented. The test can be conducted in two formats: forward digit span, where the digits are presented in the same order, and backward digit span, where the students are required to repeat the digits in reverse order.

2. Vocabulary recall: Students can be asked to recall a list of vocabulary words that they have recently learned. This task can be done in different ways, such as presenting a list of words and asking students to recall them in any order, or presenting a picture and asking students to name all the vocabulary words related to that picture.

3. Sentence recall: Students can be asked to recall a sentence that they have recently heard or read. This task can be modified by presenting the sentence in different ways, such as reading it out loud, showing it on a screen, or playing an audio recording.

4. Paragraph recall: Students can be asked to recall the main points of a paragraph or a short text that they have recently read or heard. This task can be modified by providing prompts or questions that help students recall the information more accurately.

5. Image recall: Students can be shown an image for a few seconds and then asked to recall as many details as possible. This task can be modified by changing the complexity of the image or the amount of time students have to recall the information.

By using these tasks to check memory capacity, educators can gain insights into the cognitive strengths and weaknesses of their students, which can inform their teaching strategies and approaches [5;6;7].

Language learning is a complex process that requires the integration of various cognitive skills. Among these skills, attention plays a crucial role in the acquisition and development of language skills. Attention refers to the ability to focus on specific stimuli while ignoring others, and it is a key factor in language learning.

Attention plays a critical role in the initial stages of language learning. In order to learn a new language, learners must first attend to the sounds, words, and grammatical structures of the language. For example, when learning a new language, learners must pay close attention to the sounds of the language, as well as the meaning of individual words and phrases. Without attention, learners may miss important aspects of the language and struggle to understand or communicate effectively.

A special contribution to the study of relationship between attention, memory, and language processing, particularly in the context of second language acquisition was made by Michael T. Ullman and Richard Schmidt [9]. They focused on the way that attention influences language learning is through selective attention. Selective attention is the ability to focus on specific aspects of the language while filtering out irrelevant information. For example, when learning a new language, learners must pay attention to the grammar and vocabulary of the language while ignoring other distractions in the environment. Selective attention helps learners to focus on the most important aspects of the language and to avoid being overwhelmed by the amount of information they need to process [9]. The work has engrossed the relationship between attention, conscious learning, and language proficiency, particularly in the context of classroom-based language instruction.

Another way that attention influences language learning is through sustained attention. Sustained attention is the ability to maintain focus on a task or stimulus for an extended period of time. Language learning often requires sustained attention,

as learners need to focus on the language for extended periods of time in order to absorb new information and develop their language skills. For example, learners may need to focus on listening to a conversation or reading a text for an extended period of time in order to understand the language and its context.

Ellen Bialystok has studied the relationship between bilingualism, attention, and cognitive control. Her work has shown that bilingual individuals have enhanced attentional abilities, which can translate to improved language learning [13, P.248-350].

Similarly, Elaine K. Horwitz has greatly contributed to researching the role of attention in language learning strategies. Her work has shown that attention plays a critical role in the effective use of language learning strategies, particularly in the context of self-regulated learning [11, P.175-180].

Attention also plays a role in language production. When producing language, learners must pay attention to the grammar and vocabulary of the language, as well as the context and audience for their communication. Attention helps learners to produce language that is appropriate for the situation and to avoid making mistakes in their speech or writing. In order to learn a new language, learners must first attend to the sounds, words, and grammatical structures of the language. For example, when learning a new language, learners must pay close attention to the sounds of the language, as well as the meaning of individual words and phrases. Without attention, learners may miss important aspects of the language and struggle to understand or communicate effectively.

It should be noted that attention plays a significant role in language learning motivation. Motivation is itself a key factor in language learning, and attention is closely connected with maintaining motivation. When learners pay attention to the language and make progress in their learning, they are more likely to feel motivated to continue learning and to achieve their language learning goals [12, P.35-38].

No doubt, that attention is a critical factor in language learning. It is important on the initial stages of language learning, selective attention helps learners to focus on the most important aspects of the language, sustained attention allows learners to maintain their focus on the language for extended periods of time, attention helps learners to produce appropriate language, and attention plays a role in language learning motivation. Understanding the role of attention in language learning can help learners to develop effective language learning strategies and to achieve their language learning goals more efficiently.

Language learning is a complex process that requires the integration of various cognitive skills. Among these skills, attention plays a crucial role in the acquisition and development of language skills. Attention refers to the ability to focus on specific stimuli while ignoring others, and it is a key factor in language learning.

One way that attention influences language learning is through selective attention. Selective attention is the ability to focus on specific aspects of the language while filtering out irrelevant information. For example, when learning a new

language, learners must pay attention to the grammar and vocabulary of the language while ignoring other distractions in the environment. Selective attention helps learners to focus on the most important aspects of the language and to avoid being overwhelmed by the amount of information they need to process.

Another way that attention influences language learning is through sustained attention. Sustained attention is the ability to maintain focus on a task or stimulus for an extended period of time. Language learning often requires sustained attention, as learners need to focus on the language for extended periods of time in order to absorb new information and develop their language skills. For example, learners may need to focus on listening to a conversation or reading a text for an extended period of time in order to understand the language and its context.

Attention also plays a role in language production. When producing language, learners must pay attention to the grammar and vocabulary of the language, as well as the context and audience for their communication. Attention helps learners to produce language that is appropriate for the situation and to avoid making mistakes in their speech or writing [13].

Finally, attention plays a role in language learning motivation. Motivation is a key factor in language learning, and attention plays a role in maintaining motivation. When learners pay attention to the language and make progress in their learning, they are more likely to feel motivated to continue learning and to achieve their language learning goals.

There are various strategies and techniques that can be used to train attention in the process of foreign language learning among adults. Here we give examples how to train attention in the process of foreign language learning among the adults:

1. **Mindfulness meditation:** Mindfulness meditation is a technique that involves focusing one's attention on the present moment without judgment. This technique can help learners to develop their ability to sustain attention and to filter out distractions. Learners can practice mindfulness meditation for a few minutes each day before or after their language learning sessions.

2. **Controlled attention exercises:** Controlled attention exercises involve focusing on a specific stimulus while ignoring distractions. For example, learners can listen to a short audio clip or read a paragraph of text and then answer questions about it without getting distracted by other stimuli. These exercises can help learners to develop their ability to selectively attend to important language features.

3. **Active listening:** Active listening involves paying close attention to spoken language and processing it in real-time. Learners can practice active listening by watching videos or listening to podcasts in their target language and taking notes on what they hear. This technique can help learners to develop their ability to sustain attention and to filter out distractions while listening.

4. **Reading comprehension exercises:** Reading comprehension exercises involve reading a text and answering questions about it. Learners can practice reading comprehension exercises to develop their ability to sustain attention and to filter out distractions while reading.

5. **Mnemonics:** Mnemonics are memory aids that help learners to remember vocabulary and grammar rules. Learners can use mnemonics to help them focus their attention on important language features and to remember them more easily.

6. **Goal setting:** Setting clear language learning goals can help learners to stay focused and motivated. Learners can set short-term and long-term goals for their language learning, and track their progress towards these goals. This technique can help learners to sustain attention and to stay motivated [14].

Overall, training attention in the process of foreign language learning among adults requires consistent practice and patience. Learners can use a combination of these techniques and strategies to develop their attentional skills and to achieve their language learning goals.

Communicative competence is a vital aspect of foreign language learning, as it enables learners to use language effectively in real-life situations. In this article, we will discuss why the development of communicative competence is important in the process of foreign language learning and explore the key factors that contribute to the effective language learning process. As shown in the works and articles by recent linguists [15;16.17;18] who have contributed to the development of communicative competence in foreign language learning and have helped shape language teaching methodology in the 21st century.

One of the key factors that contribute to the effective language learning process is the use of communicative language teaching (CLT) methodology. CLT focuses on developing learners' communicative competence through meaningful interaction, rather than just teaching grammar rules and vocabulary in isolation. This approach encourages learners to engage in communicative activities that simulate real-life situations, such as role-plays and discussions, which help learners develop their language skills in a more practical and authentic way.

Communicative competence encompasses the skills and knowledge required to interact successfully and meaningfully in real-life situations. This essay delves into the significance of communicative competence in foreign language learning and explores the key elements that contribute to its development.

Communicative competence comprises four interrelated components:

1. **Linguistic Competence:** Linguistic competence involves the knowledge of vocabulary, grammar, and syntax, which form the foundation of language learning. This aspect allows learners to form grammatically correct sentences and understand the structural rules of the target language.

2. **Sociolinguistic Competence:** Sociolinguistic competence focuses on understanding the appropriate language usage within social and cultural contexts. It encompasses the knowledge of sociocultural norms, conventions, and appropriate register variations based on factors such as the interlocutor, formality level, and situational context.

3. **Discourse Competence:** Discourse competence refers to the ability to understand and produce cohesive and coherent extended pieces of language, such as

conversations, narratives, and presentations. It involves understanding the organization and structure of different discourse types and being able to convey ideas logically and effectively [13;14;15].

4. Strategic Competence: Strategic competence relates to the learner's ability to compensate for communication breakdowns, to employ communication strategies effectively, and to express themselves fluently. It involves using various techniques such as circumlocution, paraphrasing, and clarifying questions to overcome language limitations.

Foreign language classrooms play a crucial role in developing communicative competence. Teachers should employ various strategies to create an immersive and communicative learning environment:

1. Authentic Materials: Incorporating authentic materials like videos, podcasts, and real-world texts exposes learners to genuine language usage, cultural contexts, and idiomatic expressions. This helps bridge the gap between classroom learning and real-life communication.

2. Task-based Activities: Task-based activities encourage learners to engage in meaningful communication by completing real-world tasks. These tasks simulate authentic situations, requiring learners to negotiate meaning, collaborate, and express themselves using the target language.

3. Role-plays and Simulations: Role-plays and simulations allow learners to practice different social and professional scenarios. This enables them to develop sociolinguistic competence by using appropriate language registers, gestures, and intonation.

4. Error Correction and Feedback: Providing constructive feedback and error correction helps learners refine their linguistic accuracy and communicative effectiveness. Encouraging self-correction and peer correction fosters a learner-centered approach and promotes reflective learning [16;17].

Developing communicative competence also involves cultural awareness and interpersonal skills. Language learners should appreciate and respect cultural differences, as cultural nuances significantly impact communication effectiveness. Interpersonal skills such as active listening, empathy, and open-mindedness are vital in understanding others and fostering successful intercultural communication.

Another factor that contributes to effective language learning is motivation. Language learners who are motivated to learn are more likely to succeed in developing their communicative competence. Motivation can be intrinsic, such as a genuine interest in the target language and culture, or extrinsic, such as the desire to pass an exam or get a job. Intrinsic motivation is generally considered more effective for long-term language learning success, as it fosters a deeper and more sustained engagement with the language [17].

Finally, language learning strategies are another important factor that contributes to effective language learning. These strategies refer to the techniques and methods that learners use to learn and practice the language, such as repetition,

summarization, and note-taking. Effective language learners use a variety of strategies to help them learn and retain the language, and they are able to adapt these strategies to different learning situations.

Conclusion. So, to sum up, research has shown that attention and memory are closely linked to language acquisition and retention. Language learners need to pay attention to the language they are learning to process and store it in memory. They also need to be able to retrieve this information from memory when they need to use it in communicative situations. Additionally, research has also shown that affective factors such as motivation, anxiety, and self-efficacy can impact foreign language learning. For instance, learners who are more motivated to learn a language tend to have better learning outcomes. Conversely, high levels of anxiety can impede learning and decrease learner motivation.

The development of communicative competence is essential in the process of foreign language learning, as it enables learners to use language effectively in real-life situations. The key factors that contribute to the effective language learning process include the use of communicative language teaching methodology, motivation, attention and memory, and language learning strategies. By focusing on these factors, language learners can enhance their communicative competence and become more confident and effective language users.

References:

1. Gass, S. M. (2003). Input and interaction. In C. Doughty & M. H. Long (Eds.), *The handbook of second language acquisition* Blackwell Publishing. p. 224-255.
2. Baddeley, A. D. (2003). Working memory: Looking back and looking forward. *Nature Reviews Neuroscience*, 4(10), p.829-839.
3. Wesche, M. B., & Paribakht, T. S. (2003). Working memory in second language acquisition. In C. J. Doughty & M. H. Long (Eds.), *The handbook of second language acquisition* Blackwell Publishing. p. 20-58.
4. Hambrick, D. Z., & Engle, R. W. (2002). Effects of domain knowledge, working memory capacity, and age on cognitive performance: An investigation of the knowledge-is-power hypothesis. *Cognitive Psychology*, 44(4), p.339-387.
5. DeKeyser, R. (2007). Skill acquisition theory. In B. VanPatten & J. Williams (Eds.), *Theories in second language acquisition: An introduction* Lawrence Erlbaum Associates. p 97-113.
6. Miki Satori (2021) Effects of working memory on L2 linguistic knowledge and L2 listening comprehension *Applied Psycholinguistics*, 42 (5), p. 1313-1340 Retrieved from DOI: <https://doi.org/10.1017/S0142716421000345>
7. Papi, M., Vasylets, O., Ahmadian, M.J. (2022) Individual difference factors for second language writing. *The Routledge Handbook of Second Language Acquisition and Individual Differences*, p. 381–395
8. Vasylets O., Gilabert R., Manchon R.M. (2017) The Effects of Mode and Task Complexity on Second Language Production. *Language Learning*, 67 (2), p. 394-430
9. Ullman, M. T. (2004). Contributions of memory circuits to language: the declarative/procedural model. *Cognition*, 92(1-2), p.231-270.
10. Horwitz, E. K. (2001). Language anxiety and achievement. *Annual Review of Applied Linguistics*, 21, p.112-126.

11. Horwitz, E. K. (2013). Language anxiety: From theory and research to classroom implications. *Language Teaching*, 46(02), p.171-182.
12. MalekAhmad Kord, Zahra Hosseinpour, Mohamad Hosseinpour (2022) Influence of Anxiety and Motivation in Language Learning, *European Journal of Educational and Development Psychology*, Vol.10, No.1, p. 30-38
13. Bialystok, E., Craik, F. I., & Luk, G. (2012). Bilingualism: consequences for mind and brain. *Trends in Cognitive Sciences*, 16(4), p. 240-250.
14. Bygate, M. (2000). Effects of task repetition on the structure and control of oral language. In M. Bygate, P. Skehan, & M. Swain (Eds.), *Researching pedagogic tasks: Second language learning, teaching and assessment* Longman. p. 23-48.
15. Ellis, R. (2003). *Task-based language learning and teaching*. Oxford University Press. 274p.
16. Robinson, P. (2011). Second language task complexity, the cognition hypothesis, language learning, and performance. In P. Robinson (Ed.), *Second language task complexity: Researching the cognition hypothesis of language learning and performance*. John Benjamins Publishing. p. 33-35.
17. Gregory D. Keating, Stefanie Wulff (2020). Edited By Bill VanPatten, *Theories in Second Language Acquisition. An introduction*. 3rd Edition. Routledge 324 p. Retrieved from <https://doi.org/10.4324/9780429503986>

Література:

1. Gass, S. M. (2003). Input and interaction. In C. Doughty & M. H. Long (Eds.), *The handbook of second language acquisition* Blackwell Publishing. p. 224-255.
2. Baddeley, A. D. (2003). Working memory: Looking back and looking forward. *Nature Reviews Neuroscience*, 4(10), p.829-839.
3. Wesche, M. B., & Paribakht, T. S. (2003). Working memory in second language acquisition. In C. J. Doughty & M. H. Long (Eds.), *The handbook of second language acquisition* Blackwell Publishing. p. 20-58.
4. Hambrick, D. Z., & Engle, R. W. (2002). Effects of domain knowledge, working memory capacity, and age on cognitive performance: An investigation of the knowledge-is-power hypothesis. *Cognitive Psychology*, 44(4), p.339-387.
5. DeKeyser, R. (2007). Skill acquisition theory. In B. VanPatten & J. Williams (Eds.), *Theories in second language acquisition: An introduction* Lawrence Erlbaum Associates. p 97-113.
6. Miki Satori (2021) Effects of working memory on L2 linguistic knowledge and L2 listening comprehension *Applied Psycholinguistics*, 42 (5), p.1313–1340 DOI: <https://doi.org/10.1017/S0142716421000345>
7. Papi, M., Vasylets, O., Ahmadian, M.J. (2022) Individual difference factors for second language writing. *The Routledge Handbook of Second Language Acquisition and Individual Differences*, p. 381–395
8. Vasylets O., Gilabert R., Manchon R.M. (2017) The Effects of Mode and Task Complexity on Second Language Production. *Language Learning*, 67 (2), p. 394-430
9. Ullman, M. T. (2004). Contributions of memory circuits to language: the declarative/procedural model. *Cognition*, 92(1-2), p.231-270.
10. Horwitz, E. K. (2001). Language anxiety and achievement. *Annual Review of Applied Linguistics*, 21, p.112-126.
11. Horwitz, E. K. (2013). Language anxiety: From theory and research to classroom implications. *Language Teaching*, 46(02), p.171-182.
12. MalekAhmad Kord, Zahra Hosseinpour, Mohamad Hosseinpour (2022) Influence of Anxiety and Motivation in Language Learning, *European Journal of Educational and Development Psychology*, Vol.10, No.1, p. 30-38.

13. Bialystok, E., Craik, F. I., & Luk, G. (2012). Bilingualism: consequences for mind and brain. *Trends in Cognitive Sciences*, 16(4), p. 240-250.

14. Bygate, M. (2000). Effects of task repetition on the structure and control of oral language. In M. Bygate, P. Skehan, & M. Swain (Eds.), *Researching pedagogic tasks: Second language learning, teaching and assessment* Longman. p. 23-48.

15. Ellis, R. (2003). *Task-based language learning and teaching*. Oxford University Press. 274p.

16. Robinson, P. (2011). Second language task complexity, the cognition hypothesis, language learning, and performance. In P. Robinson (Ed.), *Second language task complexity: Researching the cognition hypothesis of language learning and performance*. John Benjamins Publishing. p. 3-35.

17. Gregory D. Keating, Stefanie Wulff (2020). Edited By Bill VanPatten, *Theories in Second Language Acquisition. An introduction*. 3rd Edition. Routledge 324p. <https://doi.org/10.4324/9780429503986>