

NEUROPEDAGOGICAL APPROACHES THAT INCREASE THE EFFECTIVENESS OF FOREIGN LANGUAGE PROFICIENCY

НЕЙРОПЕДАГОГІЧНІ ПІДХОДИ, ЩО ПІДВИЩУЮТЬ ЕФЕКТИВНІСТЬ ВОЛОДІННЯ ІНОЗЕМНОЮ МОВОЮ

Neuropedagogy is an interdisciplinary field combining neuroscience, psychology and pedagogy, offers different approaches to enhance students' language acquisition. By aligning teaching strategies with the brain's natural learning processes, neuropedagogy fosters deeper engagement and retention. Neuropedagogical approaches, which integrate insights from neuroscience, psychology, and pedagogy, have revolutionized strategies for enhancing students' language acquisition. These methods utilize the brain's inherent learning processes, such as neuroplasticity, multisensory involvement and emotional engagement to design impactful and captivating language learning experiences. The article explores key brain-based teaching strategies that promote immersive and contextual learning, repetition, gamification, foster the formation of strong neural pathways essential for processing and retaining new linguistic skills. The above-mentioned approaches support the learning environment in promoting language acquisition. Examples of exercises presented in the article demonstrate tasks a teacher can propose to the pre-intermediate level students of non-linguistic higher educational establishments.

Highlighting the significance of emotional involvement, the paper describes techniques like storytelling, role-playing and cultural immersion that connect language learning to real-world applications, thereby increasing motivation and reducing anxiety.

Research demonstrates that applying neuropedagogical principles not only improve linguistic proficiency, but also cultivate confidence and a positive attitude toward learning. The implementation of these principles revolutionizes traditional teaching methods, making them more efficient, inclusive and aligned with how the brain learns best. These principles not only enhance academic achievement, but also empower students to thrive in an increasingly complex and dynamic world.

This study highlights the importance of integrating neuropedagogy into contemporary educational practices to empower learners and promote lifelong learning. Enhancing the understanding of cognitive processes in language learning along with adopting brain-based teaching strategies and fostering supportive learning environments can lead to improved language proficiency.

Key words: neuropedagogy, principles, teaching strategies, language proficiency, teaching methods, educational environment.

Нейропедагогіка – це міждисциплінарна галузь, яка об'єднує нейронауку, психологію та педагогіку, пропонуючи різні підходи до вдосконалення засвоєння іноземної мови.

Узгоджуючи стратегії викладання з природними процесами роботи мозку, нейропедагогіка сприяє більш глибокому залученню та покращенню запам'ятовування матеріалу. Нейропедагогічні підходи, що поєднують знання з нейронауки, психології та педагогіки, кардинально змінили стратегії вдосконалення засвоєння іноземної мови. Ці методи використовують властиві мозку процеси навчання, такі як нейропластичність, мультисенсорне та емоційне залучення, що впливає на отримання позитивного враження від вивчення іноземної мови. У статті розглянуто ключові підходи, які сприяють зануренню в контекстуальне навчання, повторенню, гейміфікації, сприяють формуванню сильних нейронних зв'язків, необхідних для обробки та закріплення нових мовленнєвих навичок. Наведені приклади вправ демонструють завдання, які викладач може запропонувати студентам, що навчаються у немовному вищому навчальному закладі і мають рівень володіння іноземною мовою нижче середнього.

Підкреслюючи важливість емоційної значущості, у статті розглянуто такі техніки як: розповіді історій, рольові ігри та звернено увагу на культурне занурення, що пов'язує вивчення іноземної мови з реальними життєвими ситуаціями, тим самим підвищуючи мотивацію та знижуючи тривожність.

Дослідження демонструє, що застосування нейропедагогічних принципів не лише покращує розвиток лінгвістичних навичок, а й розвиває впевненість та позитивне ставлення студентів до навчання. Застосування цих принципів змінює традиційні методи навчання, роблячи їх більш ефективними, інклюзивними та узгодженими з тим, як мозок найкраще засвоює інформацію. Ці принципи не лише покращують академічну успішність, а й надають студентам можливість відчувати себе більш впевненими у складному та динамічному світі.

Це дослідження підкреслює важливість включення нейропедагогіки в сучасну освітню практику, оскільки розширює перспективи студентів щодо навчання протягом усього життя. Розуміння когнітивних процесів впровадження стратегій навчання, заснованих на роботі мозку, та створення комфортного навчального середовища сприяє більш ефективному вивченню студентами іноземної мови.

Ключові слова: нейропедагогіка, принципи, стратегії навчання, володіння мовою, методи навчання, освітнє середовище.

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Problem statement. Since the late 20th century, scientists and educators have shown increasing interest in understanding the brain and its processes, connecting its functionality directly to challenges in education. This growing focus led to foundational discoveries that gave rise to neuropedagogy, a new

interdisciplinary field. Neuropedagogy combines insights from neuroscience, psychology and education to optimize learning processes. Neuropedagogy integrates insights from psychology, biology, pedagogy and other related disciplines. It aims to understand how the brain functions during learning

and applies this knowledge to design evidence-based educational strategies. This science also explores concepts like neuroplasticity, emotional engagement and personalized learning to enhance educational outcomes. It offers innovative approaches to teaching foreign languages by aligning teaching methods with how the brain processes, stores, and retrieves language-related information.

Analysis of recent research and publications.

The principles of neuropedagogy have been widely explored in scientific studies and monographs, including notable works by S. Gvozdi, I. Bakhov, V. Pienov, S. Palamarchuk, N. Dudnyk and L. Petrukhan-Shcherbakova in "Neuropedagogy in Contemporary Formal and Non-Formal Education" [4]; Gabriela Solano, Melita Vega in "Exploring Innovative Neuropedagogical Implications in English as a Foreign Language Teaching" [9]; Ansari, D., König J., Leask, M., & Tokuhama-Espinosa T. in "Developmental cognitive neuroscience: Implications for teachers' pedagogical knowledge"[1]. These and other works explore how neuropedagogy enhances educational practices, focusing on its opportunities and challenges in formal and non-formal settings, discusses the integration of neuropedagogy into modern education and its potential to individualize learning processes, analyze the relationship between neuropedagogy, neuroeducation and teacher training, emphasizing the importance of neuroimaging in educational strategies, investigate the impact of neuropedagogy on intelligence development using superlearning techniques. While many researchers have examined the goals, objectives and historical significance of neuropedagogy, less emphasis has been paid to its practical application in teaching. Consequently, examining the implementation of neuropedagogical innovations in educational environments remains a highly relevant area that demands further investigation.

The purpose of the article. This article aims to examine the challenges neuropedagogy addresses in education, exploring different effective approaches that enhance motivation and students' language acquisition, activating and developing various parts of the brain that influence good memory and better learning. It also explores technologies that stimulate brain activity during foreign language learning, providing insights into memory, attention and emotional engagement. The author focuses on activities that influence the development of "brain-friendly" teaching strategies and demonstrates how neuropedagogical achievements can assist teachers in effectively organizing educational environments.

Presentation of the main material.

Neuropedagogy offers innovative approaches to teaching foreign languages by aligning teaching methods with how the brain processes stores

and retrieves language-related information. The article studies approaches that demonstrate how neuropedagogy enhances foreign language acquisition.

1. Leveraging Neuroplasticity for Language Learning. Neuroplasticity is the brain's capacity to reshape and adapt by creating new neural pathways. Neuropedagogical approaches capitalize on this by providing immersive and repetitive language exposure, enabling learners to build strong neural pathways for language processing. Repeated exposure and multisensory engagement in language classrooms align with neuropedagogical principles, optimize neural processing of new languages [10]. Activities like role-playing, gamified learning, and spaced repetition enhance these neural adaptations, leading to improved fluency and retention. To demonstrate how leveraging neuroplasticity works in language learning, exercises must involve repetition, contextual immersion and multisensory engagement. Below are some examples of activities for the first year students of non-linguistic universities, who study the topic "Travel".

Exercise 1. Vocabulary Mapping (Visual and Semantic Connections).

The objective: Build associations between new travel-related words and visual/contextual cues.

Instructions: Provide learners with a mind map template. In the center, place the word "Travel". Surround it with categories such as "Transport," "Places," "Activities," and "Packing." Learners populate the map with related words in the target language (e.g., "airplane," "beach," "museum"). Pair each word with an image or icon for better memory retention.

Repetition and visual association strengthen neural connections, making words easier to recall.

Exercise 2. Role-Playing: Planning a Trip.

The objective: Practice conversational skills in real-world scenarios.

Instructions: Divide learners into pairs or groups. Assign roles like a travel agent, tourist or local resident. Provide a scenario: "A tourist is booking a trip to a foreign city." Learners must use target language phrases to: ask for recommendations (e.g., "Where can I find a good hotel?"), discuss transportation options (e.g., "How do I get to the airport?"), plan activities (e.g., "I'd like to visit historical sites.").

Speaking in real-life contexts helps consolidate vocabulary and grammar through meaningful practice.

Exercise 3. Virtual Reality (VR) or Video-Based Immersion.

The objective: Immerse learners in realistic travel environments.

Instructions: Use VR headsets or video tours of famous landmarks (e.g., walking through the Eiffel Tower or a Japanese garden). Learners describe what they see, ask questions, or write short paragraphs

in the target language about their experience. Immersion activates multiple senses, enhancing neuroplasticity through context-rich experiences. So, multisensory engagement enables learners to absorb the language more efficiently and apply it naturally in travel-related situations.

2. Multisensory Approaches. Multisensory learning (engaging auditory, visual, and kinesthetic senses) is central to neuropedagogy. In language learning the following activities are used: listening to audio (e.g., songs, dialogues), viewing visual aids (e.g., images, videos, gestures), performing physical actions tied to language concepts. These methods activate different brain regions, strengthening memory and comprehension. For example, songs trigger emotional and auditory memory. Learning lyrics combines rhythm, vocabulary and pronunciation. Incorporating images, videos and animations elicit emotional responses, enhancing engagement and memory.

3. Emotionally engaged learning. Studies have shown that emotionally engaged learning improves language acquisition. A study by Solano and Vega demonstrated that emotionally engaging and interactive activities increased motivation and language proficiency among those, who studied English as a foreign language [9]. Neuroscientific studies show that positive emotions experienced during learning boost neural activity in areas of the brain associated with memory, leading to improved retention. Emotions play a critical role in motivation and memory. Emotionally engaged learning emphasizes leveraging emotions to deepen cognitive engagement, enhance memory retention and foster motivation. Such activities as storytelling, role-playing and drama, music and songs, gamification, cultural immersion activities, personalized learning stimulate students' better learning. Emotional connections make vocabulary and grammar stick in long-term memory, a supportive and engaging environment reduces fear of mistakes, fun and meaningful activities inspire learners to keep practicing, exploring emotions tied to cultural content fosters deeper appreciation for the language. Here are some examples of exercises that demonstrate how this approach is used in language learning.

Storytelling with Personal Connections.

Instructions: ask students to share a short story about a memorable experience (e.g., their favorite holiday or a time they learned something new). Provide a template with sentence starters to guide them: "I went to [place] with my [family/friends]." "The best part was [activity]." Encourage them to add emotions: "I felt [excited, happy, surprised] because..."

Techniques Used: 1. Personalization: Connecting language tasks to students' real lives fosters emotional involvement. 2. Positive Emotions: Sharing happy or exciting experiences boosts motivation

and confidence. 3. Peer Interaction: Students share their stories with groupmates, creating a supportive learning environment.

4. Promoting Immersive and Contextual Learning. Neuropedagogy encourages immersive experiences, such as: watching movies or reading texts in the target language, practicing in authentic contexts, like conversations with native speakers. This real-world exposure activates the brain's mirror neurons, fostering better pronunciation and cultural understanding. Here are examples of exercises suitable for pre-intermediate students.

Role-Playing: At a Restaurant.

The objective: Practice conversational skills in a dining context.

Instructions: Divide students into pairs: one is a waiter/waitress, and the other is a customer. Provide simple menus in the target language. The customer orders food and drinks, asks questions about the menu, and the waiter provides suggestions or answers.

Example dialogue:

Customer: "Can you tell me what today's specials are?"

Waiter: "Of course! We have grilled salmon with vegetables and our chef's special lasagna."

Customer: "That sounds great. What do you recommend?"

Waiter: "The lasagna is very popular, but if you like seafood, the salmon is excellent."

Customer: "I'll try the salmon, then. Can I also get a small salad on the side?"

Waiter: "Certainly! Would you like a house salad or Caesar salad?"

Customer: "A Caesar salad, please."

Immersion: Use real or printed menus and set up the classroom to resemble a restaurant. Context: This activity places students in a real-world scenario, teaching them functional language for dining out.

Conclusions. The study concludes that enhancing the understanding of cognitive processes in language learning, along with adopting brain-based teaching strategies and fostering supportive learning environments, can lead to improved language proficiency, retention and application in non-linguistic higher education institutions.

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