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PSYCHOLINGUISTIC ASPECTS OF READING AUTHENTIC MEDICAL TEXTS IN THE STUDY OF "ENGLISH FOR SPECIFIC PURPOSES" COURSE BY STUDENTS OF MEDICAL INSTITUTIONS OF HIGHER EDUCATION

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The article provides a comprehensive analysis of the psycholinguistic aspects of reading authentic medical texts in English by students of higher medical education institutions within English for Specific Purposes courses. The study examines the key cognitive and affective challenges encountered by students, including high terminological density, complex syntactic structures, the presence of passive and embedded clauses, working memory limitations, and overall cognitive load, as well as the influence of anxiety, emotional states, and motivational factors on reading comprehension. Special attention is paid to psycholinguistic strategies for overcoming reading difficulties, including the pre-activation of professional schemas and contextual knowledge, morphological and semantic analysis of vocabulary, scaffolded work with authentic medical materials, collaborative tasks, exercises for summarizing, synthesizing, and evaluating information, as well as the integration of digital resources and dictionaries to enhance learning effectiveness. It is demonstrated that the systematic application of these strategies contributes to increased cognitive efficiency, the development of strategic awareness, reduced anxiety, enhanced motivation, and the formation of autonomous skills in reading authentic medical texts in English. The study demonstrates that the integration of psycholinguistic principles into English for Specific Purposes curricula is a key factor in enhancing students' academic, professional, and communicative competence, while also providing a foundation for the effective comprehension of English-language scientific sources, clinical guidelines, and treatment protocols. The conclusions outline directions for further research, including empirical studies on the impact of working memory, lexical access automatization, inferencing strategies, cognitive flexibility, and motivational-affective factors on the efficiency of reading authentic medical texts.

Keywords: *psycholinguistics, reading, authentic medical texts, English for Specific Purposes (ESP), cognitive strategies, motivation, academic competence.*

Єлагіна Н. І., Федчишин Н. О. Психолінгвістичні аспекти читання автентичних медичних текстів під час вивчення дисципліни «Англійська мова за професійним спрямуванням» студентами медичних закладів вищої освіти

У статті комплексно проаналізовано психолінгвістичні аспекти читання автентичних медичних текстів англійською мовою студентами медичних закладів вищої освіти у курсі вивчення дисципліни «Англійська мова за професійним спрямуванням». Досліджено ключові когнітивні та афективні аспекти, з якими стикаються студенти, зокрема високу термінологічну щільність текстів, складні синтаксичні конструкції, наявність пасивних та вставних речень, обмеження робочої пам'яті та загальне когнітивне навантаження, а також вплив тривожності, емоційного стану та мотиваційних чинників на ефективність розуміння тексту. Особливу увагу приділено психолінгвістичним стратегіям подолання труднощів читання, серед яких: попередня активація професійних схем і контекстуальних знань, морфологічний та семантичний аналіз лексики, поетапно організована навчальна діяльність з використанням автентичних медичних матеріалів, завдання колаборативного навчання, вправи на узагальнення, синтез та оцінку інформації, а також інтеграція цифрових ресурсів і словників для підвищення ефективності навчання. Доведено, що систематичне

застосування цих стратегій сприяє підвищенню когнітивної ефективності, розвитку стратегічної усвідомленості, зниженню тривожності, активізації мотивації та формуванню автономних навичок читання автентичних медичних текстів англійською мовою. Продемонстровано, що інтеграція психолінгвістичних принципів у навчальні програми з дисципліни «Англійська мова за професійним спрямуванням» є ключовим чинником підвищення академічної, професійної та комунікативної компетентності студентів, а також забезпечує основу для ефективного розуміння англомовних наукових джерел, клінічних рекомендацій та протоколів лікування. У висновках запропоновано напрями подальших досліджень, зокрема емпіричне вивчення впливу робочої пам'яті, автоматизації лексичного доступу, стратегії контекстуального інференційного виведення значень, когнітивної гнучкості та мотиваційно-афективних чинників на ефективність читання автентичних медичних текстів.

Ключові слова: *психолінгвістика, читання, автентичні медичні тексти, англійська мова за професійним спрямуванням, когнітивні стратегії, мотивація, академічна компетентність.*

Introduction. In contemporary medical education, English has become the dominant language of scientific communication, clinical guidelines, and international professional exchange. As a result, medical students are increasingly required to read and interpret authentic medical texts in English, including research articles, case reports, and evidence-based protocols. Within English for Specific Purposes (ESP) courses, reading competence is therefore not merely an academic skill but a prerequisite for professional development and lifelong learning in medicine.

Authentic medical texts differ substantially from pedagogically adapted materials typically used in general English instruction. They are characterized by a high concentration of specialized terminology, complex syntactic structures, and discipline-specific discourse conventions. While such texts provide valuable exposure to real-world language use, they also create significant comprehension difficulties for ESP students whose linguistic competence and professional knowledge are still developing [2; 8].

From a psycholinguistic perspective, reading is understood as a complex cognitive activity involving multiple interrelated processes, including word recognition, syntactic parsing, semantic integration, inferencing, and the activation of background knowledge. Psycholinguistics offers theoretical models that explain how readers process written language and how limitations in cognitive resources, such as working memory, can affect comprehension – particularly in a foreign language context [9, p. 235].

Medical ESP students face a dual cognitive burden when reading authentic texts, i.e. they must process a foreign language while simultaneously constructing meaning within a specialized conceptual domain. This dual load often leads to slow reading, excessive reliance on dictionaries, and fragmented understanding of the text as a whole. Such difficulties indicate that linguistic competence alone is insufficient; rather, successful reading requires psycholinguistic strategies that support efficient processing and meaning construction [7].

Despite the relevance of psycholinguistics to ESP reading instruction, relatively few studies focus specifically on the psycholinguistic aspects of reading authentic medical texts. This article seeks to address this gap by analyzing key challenges faced by medical ESP students and by proposing pedagogically relevant strategies grounded in psycholinguistic theory.

The aim of this article is to examine the psycholinguistic aspects of reading authentic medical texts in ESP contexts and to identify effective strategies for overcoming comprehension difficulties among medical students. To accomplish this aim, the article pursues the following objectives: (1) to analyze psycholinguistic mechanisms involved in reading medical texts in a foreign language; (2) to identify common psycholinguistic challenges faced by ESP medical students; (3) to systematize effective reading strategies based on psycholinguistic research; (4) to formulate pedagogical recommendations for ESP instruction at medical universities.

Results. Psycholinguistics conceptualizes reading as an interactive process in which readers actively construct meaning rather than passively decode text. According to interactive models of reading, comprehension emerges from the interaction between bottom-up processes (such as word recognition and syntactic analy-

sis) and top-down processes (such as prediction, inferencing, and schema activation).

In a foreign language, bottom-up processing often requires more cognitive effort due to limited automaticity in lexical access. As a result, fewer cognitive resources remain available for higher-level comprehension processes, such as integrating information across sentences or interpreting implicit meanings [6]. This imbalance is particularly evident in ESP contexts, where unfamiliar terminology and complex syntax increase processing demands.

Early psycholinguistic models described reading as a "psycholinguistic guessing game," emphasizing the role of prediction and prior knowledge [5, p. 129]. While this view has been refined, modern interactive models continue to stress that skilled readers rely on both linguistic cues and contextual information.

For ESP students, especially in medicine, background knowledge plays a decisive role. Readers with well-developed medical schemas can compensate for linguistic gaps by making informed predictions about content. Conversely, students with limited professional knowledge may struggle even when linguistic input is relatively accessible [10, p. 68].

Authentic texts are defined as materials produced for real communicative purposes rather than for language teaching [4, p. 101]. In medical ESP, authenticity enhances relevance and motivation but also increases cognitive complexity. Research shows that while students' value authentic materials, they often perceive them as difficult and anxiety-provoking without appropriate pedagogical support [3].

International studies consistently highlight vocabulary knowledge as a key predictor of reading comprehension in ESP contexts. Nation I.S.P. argues that readers need to understand at least 95–98% of running words in a text to achieve adequate comprehension [11, p. 328]. In medical texts, this threshold is rarely met by undergraduate students, which explains their reliance on compensatory strategies such as scanning and selective reading.

Psycholinguistic research also emphasizes morphological awareness – understanding prefixes, suffixes, and roots – as a crucial skill for processing specialized vocabulary. Thus, recognizing the meaning of *-itis*, *-ectomy*, or *hyper-* enables students to infer meanings without interrupting reading flow.

Ukrainian scholars have increasingly addressed psycholinguistic aspects of foreign language learning. Researchers such as K. Oleksandrenko and O. Mysechko emphasize that text comprehension depends on the interaction between linguistic competence, cognitive processes, and communicative context [1, p. 39]. Studies in ESP methodology in Ukraine also highlight the importance of strategy instruction and cognitive scaffolding when working with professional texts [12, p. 106]. These theoretical considerations provide a foundation for examining the concrete psycholinguistic difficulties that arise in ESP medical students' engagement with authentic medical texts.

One of the most significant challenges for ESP medical students is terminological density. Medical texts often contain long chains of specialized nouns (e.g., *acute myocardial infarction management guidelines*), which require complex syntactic parsing and semantic integration. Psycholinguistically, such noun phrases increase processing time and working memory load, especially for non-native readers.

Another difficulty concerns syntactic complexity. Passive constructions and embedded clauses are frequent in scientific medical discourse (e.g., *The drug was administered after the diagnosis had been confirmed*). These structures delay access to core meaning and require readers to maintain multiple elements in working memory, which can lead to misinterpretation or superficial understanding.

Inferencing represents a further challenge. Medical texts often omit explicit explanations, assuming shared professional knowledge. ESP students may fail to infer causal relationships or clinical implications due to insufficient domain-specific schemas. From a psycholinguistic viewpoint, this limits top-down processing and forces readers to rely excessively on bottom-up decoding [9]. In addition to these cognitively driven comprehension difficulties, the processing of authentic medical texts is further complicated by affective factors that influence readers' attentional control and cognitive efficiency.

Reading authentic medical texts frequently triggers heightened levels of anxiety among ESP

students, particularly when the perceived linguistic and conceptual difficulty of the material exceeds their current competence. Medical texts often contain dense terminology, unfamiliar abbreviations, and complex syntactic structures, which may create a sense of cognitive overload, e.g., when students encounter a clinical research article containing multiple passive constructions and specialized terms such as *myocardial ischemia*, *angiographic findings*, or *postoperative complications*, they may experience uncertainty about their ability to interpret the text accurately. This uncertainty can lead to reading anxiety, which negatively affects overall comprehension.

From a psycholinguistic perspective, affective factors such as anxiety directly influence cognitive processing during reading. Research indicates that anxiety reduces available attentional resources, limiting the capacity of working memory to process and integrate textual information efficiently. As a result, ESP students may become excessively focused on decoding individual words rather than constructing a coherent mental representation of the text. Students may repeatedly reread the same sentence in a medical guideline, attempting to understand each lexical item, yet fail to grasp the main clinical recommendation presented in the paragraph.

Moreover, anxiety can disrupt top-down processing mechanisms by inhibiting the activation of relevant background knowledge and predictive strategies. When readers doubt their comprehension abilities, they are less likely to rely on contextual cues or professional schemas, which are essential for interpreting implicit meanings in medical discourse. In practice, this may be observed when students struggle to infer causal relationships between symptoms and diagnoses in a case report because their attention is diverted toward surface-level linguistic difficulties rather than deeper semantic connections. Psycholinguistically, such behavior reflects an imbalance between bottom-up and top-down processing, with the former dominating due to emotional interference [9, p. 169].

Motivational factors also play a significant role in shaping ESP students' engagement with authentic medical texts. While many students recognize the professional relevance of authentic materials, repeated experiences of difficulty may lead to decreased self-efficacy and avoidance strategies, such as skimming without comprehension or relying exclusively on translations. Conversely, supportive instructional practices – including guided reading tasks, collaborative discussion, and scaffolded vocabulary support – can reduce anxiety and enhance motivation, thereby improving cognitive efficiency during reading. These observations confirm that psycholinguistic challenges in medical ESP reading are inseparable from affective and motivational dimensions, which must be addressed systematically within ESP pedagogy. These findings underscore the need for pedagogically grounded strategies that address both the cognitive and affective dimensions of reading in medical ESP contexts.

Psycholinguistically informed instruction emphasizes pre-reading activities that activate relevant schemas and reduce cognitive load. For instance, analyzing headings, abstracts, or key terms before reading enables students to form mental predictions about content, facilitating top-down processing.

Morphological analysis training is particularly effective in medical ESP. Teaching students to identify roots and affixes allows faster lexical access and supports inferencing. Thus, understanding the prefix *cardio-* and the suffixes *-logy* and *-pathy* enables students to decode unfamiliar terms without constant reliance on dictionaries [11].

Scaffolded use of authentic texts, including glossaries and guided questions, helps bridge the gap between simplified materials and fully authentic discourse. Collaborative reading tasks further support comprehension by allowing students to negotiate meaning and share cognitive resources. The effectiveness of such scaffolded and collaborative approaches highlights the broader pedagogical implications of integrating psycholinguistic principles into ESP reading instruction.

The findings of the present analysis indicate that ESP reading instruction for medical students should extend beyond traditional comprehension-check questions and instead explicitly target the psycholinguistic processes involved in reading. Conventional practices that focus primarily on answering factual questions after reading often fail to address the underlying cognitive dif-

ficulties students experience during text processing. As psycholinguistic research demonstrates, effective reading instruction must support lexical access, syntactic parsing, inferencing, and integration of information at both sentence and discourse levels [6, p. 411].

One important pedagogical implication of this psycholinguistic perspective concerns the development of strategic awareness among ESP learner. Teachers should explicitly train students to use reading strategies such as predicting content, identifying discourse markers, and recognizing rhetorical structures typical of medical texts. The instructors can guide students to analyze the structure of the abstract (background, methods, results, conclusions) before reading the full text, when working with a research article. This practice helps students anticipate information flow and reduces cognitive load during reading by activating top-down processing mechanisms.

Another implication involves promoting automaticity in lexical processing, particularly with respect to medical terminology. Slow and effortful word recognition consumes working memory resources and hinders higher-level comprehension. To address this issue, ESP teachers can incorporate regular activities focused on morphological analysis and collocation awareness. Thus, repeated exposure to word families such as *diagnose – diagnosis – diagnostic* or affixes like *hyper-*, *hypo-*, and *-itis* enables students to recognize patterns and infer meanings more efficiently. Over time, such practice contributes to faster lexical access and smoother reading flow, which is essential for processing authentic medical texts.

In addition, instructional tasks should be designed to support deep cognitive engagement with content rather than surface-level decoding. Tasks such as summarizing clinical cases, comparing treatment protocols, or evaluating the implications of research findings encourage students to integrate linguistic input with professional knowledge. Students may be asked to explain the rationale behind a recommended treatment in their own words or to discuss how the information could be applied in a real clinical scenario after reading a clinical guideline. Psycholinguistically, such tasks promote meaningful semantic processing and strengthen the connection between language and conceptual understanding.

Finally, the pedagogical implications of this study emphasize the importance of scaffolding and gradual progression when introducing authentic medical texts. Teachers should carefully select materials that align with students' linguistic proficiency and professional knowledge while providing supportive tools such as glossaries, guiding questions, and collaborative discussion. By addressing psycholinguistic processes directly and systematically, ESP instructors can create a learning environment that reduces anxiety, enhances motivation, and fosters the development of autonomous and proficient readers of medical English.

Conclusions. The present article has demonstrated that reading authentic medical texts in English represents a cognitively and affectively complex task for ESP students in medical universities. Drawing on psycholinguistic theory and recent research in ESP methodology, the study has identified key challenges related to terminological density, syntactic complexity, working memory limitations, inferencing difficulties, and affective variables such as anxiety and motivation. The analysis confirms that successful comprehension of medical texts depends not only on linguistic competence but also on the interaction between cognitive processing mechanisms and emotional factors. By systematizing psycholinguistically grounded strategies – including schema activation, morphological awareness training, and scaffolded engagement with authentic materials – the article highlights the necessity of integrating psycholinguistic insights into ESP reading instruction in order to enhance students' academic literacy and professional readiness.

At the same time, the findings of this study point to several promising directions for further research. Future investigations could include empirical studies examining the relationship between specific psycholinguistic variables (such as working memory capacity, lexical automaticity, or inferencing ability) and reading performance in medical ESP contexts. Longitudinal research is also needed to assess the effectiveness of psycholinguistically informed instructional

interventions over time. In addition, comparative studies involving students with different linguistic and educational backgrounds may provide deeper insight into the role of prior knowledge and language experience in processing authentic medical texts. Such research would contribute to the development of evidence-based ESP curricula and further refine pedagogical approaches aimed at fostering autonomous, confident, and proficient readers of medical English.

Bibliography

1. Олександренк К., Мисечко О. Психолінгвістичні аспекти сприйняття іншомовного тексту. *Психологічний журнал*. 2020. № 4. С. 35–46.
2. Basturkmen H. Developing courses in English for specific purposes. Hampshire: Palgrave Macmillan, 2010 154 p.
3. Basturkmen H., Elder C. The practice of LSP. *The Handbook of Applied Linguistics*. 2008. № 1. P. 672–694. DOI: https://doi.org/10.1002/9780470757000.ch27.
4. Gilmore A. Authentic materials and authenticity in foreign language learning. *Language Teaching*. 2007. № 40 (2). P. 97–118. DOI: https://doi.org/10.1017/S0261444807004144.
5. Goodman K. Reading: A psycholinguistic guessing game. *Journal of the Reading Specialist*. 1967. № 6 (4). P. 126–135.
6. Grabe W. Reading in a second language: Moving from theory to practice. Cambridge: Cambridge University Press, 2009. 574 p.
7. Grabe, W., & Stoller, F.L. Teaching and researching reading. London: Routledge, 2011. 318 p.
8. Hyland K., Wong L.LC. Specialized English: new directions in ESP and EAP research and practice. London: Routledge, 2019. 274 p.
9. Kintsch W. Comprehension: A paradigm for cognition. Cambridge: Cambridge University Press, 1998. 459 p.
10. Koda K. Insights into second language reading: a cross-linguistic approach. Cambridge: Cambridge University Press, 2005. 320 p.
11. Nation I.S.P. *Learning vocabulary in another language* (2nd ed.). Cambridge: Cambridge University Press, 2013. 470 p.
12. Tsymbal S. Psycholinguistic approach to teaching English reading to university students. *Psychological Journal*. 2022. № 8. P. 102–108. DOI: https://doi.org/10.31499/2617-2100.8.2022.258323

References

1. Oleksandrenko, K., & Mysechko, O. (2020). Psykholinhvistychni aspekty spryynyattya inshomovnoho tekstu [Psycholinguistic aspects of foreign-language text perception]. *Psykholohichnyy zhurnal – Psychological Journal*, 4, 35–46 [in Ukrainian].
2. Basturkmen, H. (2010). *Developing courses in English for specific purposes*. Palgrave Macmillan. 154 [in English].
3. Basturkmen, H., & Elder, C. (2008). The practice of LSP. *The Handbook of Applied Linguistics*, 1, 672–694. https://doi.org/10.1002/9780470757000.ch27.
4. Gilmore, A. (2007). Authentic materials and authenticity in foreign language learning. *Language Teaching*, 40 (2), 97–118. https://doi.org/10.1017/S0261444807004144.
5. Goodman, K. (1967). Reading: A psycholinguistic guessing game. *Journal of the Reading Specialist*, 6 (4), 126–135 [in English].
6. Grabe, W. (2009). Reading in a second language: Moving from theory to practice. Cambridge University Press. 574 [in English].
7. Grabe, W., & Stoller, F.L. (2011). Teaching and researching reading. Pearson. 318.
8. Hyland, K., & Wong L.L.C. (2019). Specialised English: new directions in ESP and EAP research and practice. *Routledge.* 274.
9. Kintsch, W. (1998). Comprehension: A paradigm for cognition. Cambridge University Press. 459.
10. Koda, K. (2005). Insights into second language reading: a cross-linguistic approach. *Cambridge University Press.* 320.
11. Nation, I.S.P. (2013). Learning vocabulary in another language (2nd ed.). *Cambridge University Press.* 470.
12. Tsymbal, S. (2022). Psycholinguistic approach to teaching English reading to university students. *Psychological Journal*, 8, 102–108. https://doi.org/10.31499/2617-2100.8.2022.258323.

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