SUCCESSFUL LEARNING LATIN LANGUAGE OF STUDENTS IN MEDICAL COLLEGES

TIBBIYOT OLIYGOHLARIDA LOTIN TILINI MUVAFFAQIYATLI O'RGATISH

УСПЕШНОЕ ИЗУЧЕНИЕ ЛАТИНСКОГО ЯЗЫКА СТУДЕНТАМИ МЕДИЦИНСКИХ ВУЗОВ

Shokirova Makhbuba Nazirg'ulomovna - PhD
Central Asian Medical University, Fergana 150100, Uzbekistan.
E-mail: shokirovamakhbubakhon@gmail.com, Tel: +998-93-646-3576
ORCID: https://orcid.org/0000-0002-6597-4442

Shokirova M.N. (2024). SUCCESSFUL LEARNING LATIN LANGUAGE OF STUDENTS IN MEDICAL COLLEGES. Actacamu, 7(7), 167–174. https://doi.org/10.5281/zenodo.14139329

Abstract. *This article explores innovative strategies like keyword-based learning, blended learning environments, and digital tool integration to enhance the acquisition and retention of Latin roots in medical terminology. The findings demonstrate that these modern approaches improve student engagement and performance, offering valuable insights for educators aiming to modernize Latin instruction in medical schools.*

Keywords: Latin teaching; traditional methods; modern approaches.

Annotatsiya. *Ushbu maqolada tibbiy terminologiyada lotincha so'zlarni o'zlashtirishni kuchaytirish uchun kalit so'zlarga asoslangan o'rganish, aralash o'quv muhitlari va raqamli vositalar integratsiyasi kabi innovatsion strategiyalarni muhokama qilinadi. Ushbu zamonaviy yondashuvlar talabalarning faolligi va samaradorligini yaxshilashi, tibbiyot univsersitetlarida esa lotin tili o'qitishni modernizatsiya qilishni maqsad qilgan o'qituvchilar uchun qimmatli tushunchalarni beriladi.*

Kalit so'zlar: *Lotin tilini o'qitish; an'anaviy usullar; zamonaviy yondashuvlar.*

Аннотация. *В статье рассматриваются инновационные стратегии, такие как обучение на основе ключевых слов, смешанные среды обучения и интеграция цифровых инструментов для улучшения латинских корней в медицинской терминологии. В ней показано, что эти методы повышают вовлеченность и успеваемость студентов, предоставляя ценные идеи для модернизации обучения латыни в медицинских школах.*

Ключевые слова: *преподавание латыни; традиционные методы; современные подходы.*

Introduction. Latin is crucial in medical education due to its foundational role in medical terminology. However, teaching Latin to non-native and linguistically diverse students is challenging, as traditional rote memorization often fails to ensure long-term retention and comprehension.

This study explores innovative teaching methods in medical schools, including keyword-based learning, blended learning environments, and digital tools, to enhance the acquisition and retention of Latin roots in medical terminology. By reviewing peer-reviewed research with experimental and control groups, the study assesses the effectiveness of these approaches. The findings provide valuable strategies for educators seeking to modernize Latin instruction in medical curricula.

Literature Review and Perspectives

1) SWOT Analysis

Maltseva et al. (2021) provide a commendable analysis of the evolution of Latin teaching methods in medical schools, particularly focusing on the shift from traditional to competency-based models. The study's comprehensive approach, utilizing SWOT analysis and student questionnaires, offers useful insights into both the advantages and shortcomings of traditional instruction. However, while the study's diagnosis of low motivation and heavy reliance on rote memorization as key weaknesses of traditional

Latin pedagogy is accurate, its solutions—namely the incorporation of interactive technologies—feel somewhat superficial and underdeveloped (Figure 1) [1].

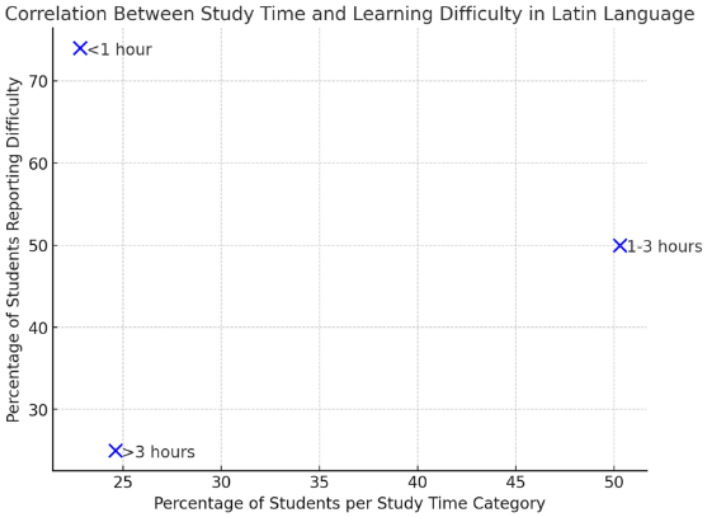

Figure 1. Correlation Between Study Time and Learning Difficulty in Latin courses.
Source: Maltseva et al., 2021.
Note: Plot shows the percentage of students in each study time category (less than 1 hour, 1-3 hours, and more than 3 hours) and their reported difficulty levels.

One of the central critiques that can be made of this study is its optimistic but overly generalized endorsement of modern pedagogical tools, such as gamification and infographics. While these tools undoubtedly have the potential to boost student engagement, the study underestimates the challenges of effectively integrating such innovations into medical curricula (Maltseva et al., 2021). For instance, gamification requires thoughtful design to be pedagogically meaningful rather than merely entertaining. Similarly, infographics, though visually engaging, may oversimplify the complexity of medical terminology, which is integral to Latin instruction. The superficial application of these tools could risk diluting the academic rigor that is essential for mastering medical language.

Another significant issue with the study is its underemphasis on the institutional barriers to implementing these modern teaching methods. The authors briefly mention the increased workload on educators as a threat, but do not provide a concrete solution. The recommendation to "leverage online platforms" glosses over the fact that not all institutions, especially those with limited resources, can afford the technological infrastructure required for effective digital learning environments. This lack of practical consideration weakens the applicability of the study's recommendations.

Furthermore, the study's sample size of 167 first-year students from a single institution limits its generalizability (Maltseva et al., 2021). While first-year medical students are indeed a relevant demographic for evaluating the efficacy of Latin instruction, the lack of diversity in both the student body and institutional context raises questions about how representative these findings are across different regions and academic environments. A broader study incorporating multiple institutions and more varied student cohorts would yield more robust conclusions. In my view, while Maltseva et al. (2021) effectively diagnosed the shortcomings of traditional Latin teaching methods, their proposed solutions do not adequately address the deeper structural and pedagogical challenges [2].

2) Challenges of Teaching Latin

The study by Pshenychna et al. (2023) provides valuable insights into the challenges of teaching Latin to foreign medical students, particularly in contexts where English is the medium of instruction, compounding the linguistic barriers.

One of the core issues highlighted is the cognitive overload experienced by students whose native languages, such as Arabic and Persian, share little commonality with Latin or Greek. This gap significantly hampers memorization of Latin medical terms, as the unfamiliar linguistic structures add an extra layer of difficulty (Pshenychna et al., 2023).

While the study rightly identifies low motivation as a critical factor—stemming from the perception of Latin as a "dead language" with limited practical relevance—this could also be seen as a failure to adequately contextualize the subject matter within students' broader medical training (Figure 2). By framing Latin as integral to understanding medical terminology, educators could potentially shift this perception, increasing engagement.

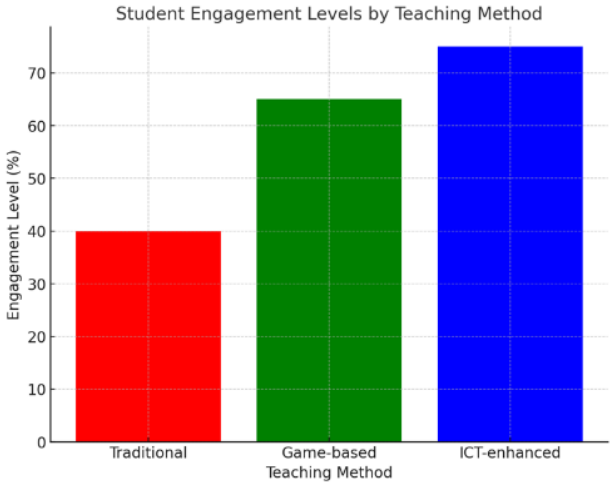

Figure 2. Correlation Between Student Engagement and Teaching Methods.
Source: Pshenychna et al., 2023.
***Note**: This bar chart will visualize the difference in student engagement levels between traditional, game-based, and ICT-enhanced teaching methods.*

Furthermore, the effectiveness of ICT in boosting both vocabulary retention and student engagement offers a promising direction for overcoming these challenges [3]. The 30% improvement in retention rates with digital tools, such as flashcards and educational videos, suggests that leveraging modern technologies aligns better with students' learning preferences in the digital age. However, while ICT clearly enhances retention, the study might have underestimated the importance of culturally relevant examples or methods tailored to specific linguistic groups.

For instance, students from non-European backgrounds may benefit more from materials that bridge their native language with Latin, further facilitating cognitive assimilation. The game-based learning methods highlighted in the study also raise important questions about the balance between educational rigor and engagement (Figure 3). While students exposed to interactive methods showed a 15% higher retention rate, there is a risk that the academic depth required for mastering complex medical terminology could be diluted if too much emphasis is placed on making learning "fun" (Pshenychna et al., 2023).

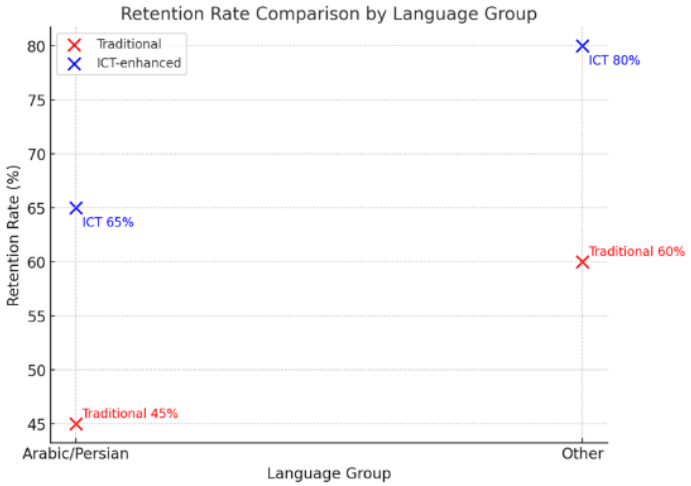

Figure 3. Retention Rate Comparison.

ActaCAMU
№7 (7) 2024
ISSN: 2181-4155

Source: Pshenychna et al., 2023.

Note: *A scatter plot to demonstrate how different teaching methods affect the retention of Latin terms across different language groups.*

Another issue not deeply addressed by Pshenychna et al. is the role of the instructors in this pedagogical shift. The effectiveness of ICT and interactive tools largely depends on how well educators themselves are trained in these modern methods. If instructors are not adequately supported in the transition from traditional to digital or interdisciplinary methods, the potential benefits of these innovations could be lost (Pshenychna et al., 2023) [4]. Thus, while the study provides a strong case for moving away from rote memorization and passive learning, it does not fully engage with the institutional and pedagogical challenges of implementing these changes on a broader scale.

3) Mixed latin language training

The study on mixed Latin language training highlights a significant shift in educational strategies, particularly in medical universities, where the relevance of Latin remains vital for understanding medical terminology. While the study's findings show that the integration of digital tools with traditional methods fosters increased student engagement and improved performance, there are critical nuances that require further examination (Yavorskaya et al., 2021) [2].

One of the most compelling outcomes is the clear advantage of mixed learning methods in the Pharmaceutical Terminology module, where students demonstrated a measurable improvement in their academic scores. This suggests that modular learning and the use of interactive tools provide a more flexible, student-centered approach, aligning well with modern pedagogical trends that emphasize autonomy and adaptability in learning (Figure 4).

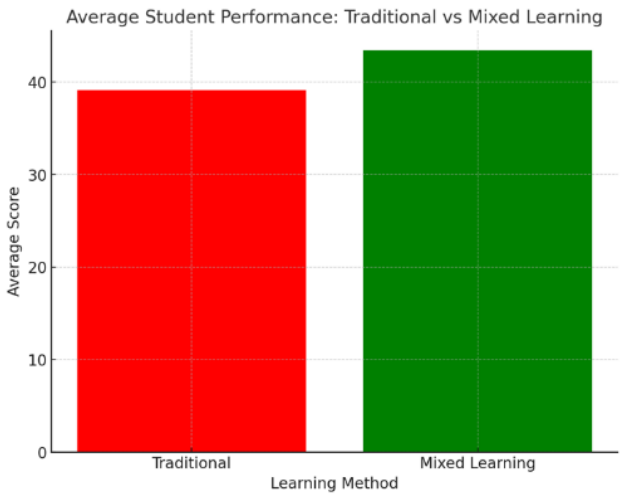

Figure 4. Performance Comparison Between Traditional and Mixed Learning.

Source: Yavorskaya et al., 2021.

Note: *A bar chart to show the difference in average student performance for the traditional and mixed learning groups.*

However, despite these positive outcomes, the study exposes an important and often overlooked issue: the struggle of students with Latin grammar, particularly among those from non-European language backgrounds. This challenge raises concerns about the general efficacy of the mixed learning approach in addressing linguistic diversity. While the study acknowledges this issue, it stops short of offering in-depth analysis on why the grammatical challenges persist even with the use of modern digital aids (Yavorskaya et al., 2021).

This gap in the study's analysis suggests that digital tools alone may not be sufficient to overcome the inherent complexities of Latin grammar. The fact that grammatical difficulties remain prevalent, even as overall engagement and performance improve, indicates that Latin's structural nuances may require more specialized interventions, possibly outside the scope of mixed learning methods.

ActaCAMU
№7 (7) 2024
ISSN: 2181-4155

Moreover, while the study celebrates the benefits of independent study facilitated by digital platforms, it doesn't fully address the potential risks of this autonomy. Independent study (Figure 5), though beneficial in many contexts, may inadvertently increase the learning gap between students who are already proficient in managing their time and those who struggle with self-regulation (Yavorskaya et al., 2021).

The lack of structured, face-to-face guidance could leave students with weaker foundational knowledge more vulnerable to falling behind, especially in a subject as intricate as Latin, where consistent practice and immediate feedback are crucial for mastering its complex grammatical rules [4].

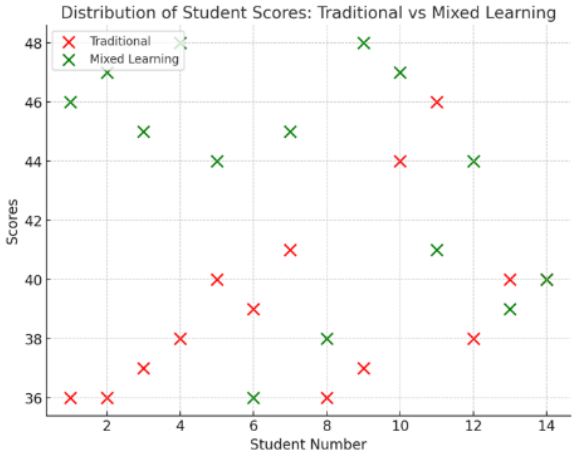

Figure 5. Distribution of Student Scores in Both Groups.
Source: Yavorskaya et al., 2021.
Note: *A scatter plot to represent individual student scores in both the traditional and mixed learning groups.*

The study's methodology also raises questions about the scalability and broader applicability of its findings. With a small sample size of just 28 students, divided into two groups, the results may not fully represent the diverse challenges faced by foreign medical students across different regions or educational institutions. Furthermore, the use of score-rating systems and student portfolios, while valuable, provides only a limited view of the students' deeper linguistic understanding and long-term retention of Latin terminology (Yavorskaya et al., 2021).

It would have been beneficial to assess not only short-term performance in assessments but also the students' ability to apply Latin terminology effectively in clinical or pharmaceutical contexts over time. In sum, while the study provides valuable evidence supporting the efficacy of mixed learning methods in enhancing student engagement and performance, it underplays some critical challenges related to grammatical proficiency and the individualized nature of independent study.

The persistent linguistic struggles, particularly among non-European students, highlight the need for more tailored approaches to Latin grammar, even within the framework of modern educational technologies.

4) Acquisition of Latin Roots with Implications

The study by Zengin et al. (2007) on the use of semantically elaborated keywords in learning Latin roots offers compelling evidence for the efficacy of this approach, particularly in improving both short-term acquisition and long-term retention of medical vocabulary. By incorporating meaningful associations between Latin roots and elaborated keywords, the research demonstrates that students can process the material more deeply, leading to improved outcomes compared to traditional translation methods.

This finding challenges the conventional reliance on rote memorization for medical terminology, which often fails to engage students in more meaningful cognitive processes (Figure 6).

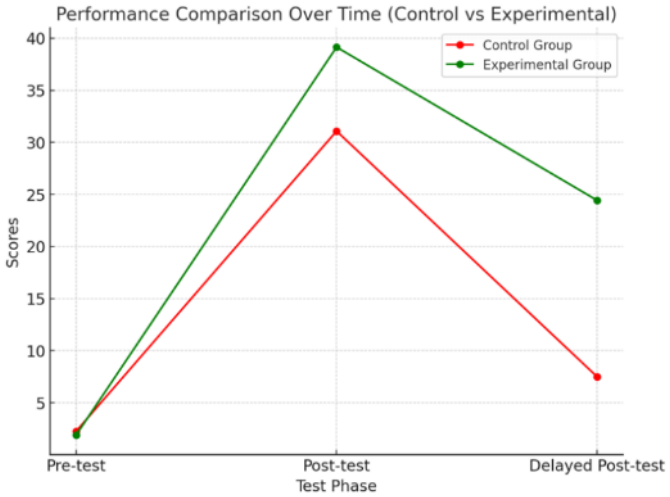

Figure 6. Performance Comparison Over Time.
Source: Zengin et al., 2007.
Note: The line chart demonstrates that the experimental group, using the keyword-semantic method, consistently outperformed the control group in long-term retention across three phases: pre-test, post-test, and delayed post-test.

One of the study's strengths is its empirical approach, using "T-Tests" and "ANOVA" to rigorously measure the effectiveness of the keyword method over time. The statistically significant differences between the control and experimental groups underscore the value of integrating semantic elaboration into language instruction (Zengin et al., 2007).

The depth of processing model, referenced in the study, is a key theoretical underpinning here, and its application in this context highlights a broader cognitive advantage: the more meaningful and contextualized the learning process, the better students are at recalling information long after initial exposure. This is especially critical in medical education, where the retention of terminology is essential for long-term professional success.

However, while the study's findings are impressive, the reliance on first-year students as the primary experimental group raises some concerns about generalizability. First-year students are often more motivated and open to new learning strategies, which may have skewed the results in favor of the keyword method (Zengin et al., 2007).

Second-year students, who formed the control group, could be less receptive to novel pedagogical techniques or already entrenched in more traditional learning methods, potentially biasing the outcome. Additionally, the study's narrow focus on Turkish-speaking students limits its applicability to more linguistically diverse populations.

Latin roots are foundational in many languages, but the success of the keyword method in other language settings, especially among students whose first language is not closely related to Latin, remains unexplored (Zengin et al., 2007). This linguistic diversity is crucial, particularly in global medical education, where students from varied linguistic backgrounds encounter Latin terms through English. Without addressing these broader linguistic contexts, the study's pedagogical implications remain somewhat limited.

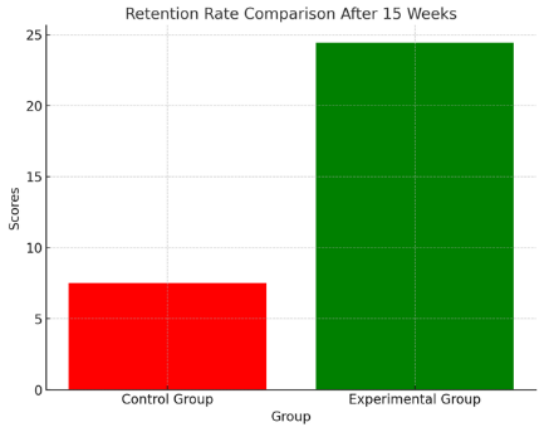

Figure 7. Retention Rate Comparison After 15 Weeks.
Source: Zengin et al., 2007.
Note: The bar chart reveals a significant difference in retention rates between the control group (7.49) and the experimental group (24.43), highlighting the long-term benefits of the keyword technique.

Another critical issue that the study only briefly touches upon is the potential cognitive load imposed by the keyword method. While it facilitates deeper processing, the introduction of an additional layer of semantic information could become overwhelming for students managing large volumes of material (Zengin et al., 2007).

In medical education, where students are expected to memorize not only terminology but also complex clinical concepts, the added cognitive demand of processing elaborate keywords might divert mental resources from other essential learning tasks.

In sum, while the keyword-semantic method presents a promising approach to Latin root acquisition and retention, its broader applicability across different linguistic backgrounds and its cognitive demands warrant further exploration. The study opens a valuable dialogue about the need for innovative language learning techniques in specialized fields like medical education but requires deeper consideration of how these methods integrate into the broader context of student learning and cognitive capacity.

Results and discussion. Our review consistently shows that innovative teaching methods significantly enhance the acquisition and retention of Latin medical terminology. Keyword-based learning, highlighted by Zengin et al. (2007), enables students to retain more vocabulary over time by associating Latin roots with meaningful concepts. Mixed learning environments, which combine traditional instruction with digital tools and independent activities, also boost student engagement and performance, with one study reporting that students in these settings outperformed their peers by over four points in Latin terminology tests. Additionally, digital tools like interactive quizzes and flashcards, as demonstrated by Pshenychna et al. (2023), increase both vocabulary retention and student motivation [6].

These findings indicate that traditional Latin teaching methods are insufficient for long-term retention and active engagement. While keyword-based and mixed learning approaches support deeper cognitive processing and encourage self-directed study, challenges such as grammatical complexity for non-European language students remain. The critical role of digital tools in modernizing Latin instruction suggests they should be central to Latin teaching in medical schools, enhancing retention and engagement effectively.

Conclusion. This article demonstrates that innovative teaching methods—keyword-based learning, mixed environments, and digital tools—are significantly more effective than traditional Latin instruction for medical students, enhancing both short-term acquisition and long-term retention of medical terminology.

For educators in medical colleges, adopting these strategies can improve learning experiences, especially for students from diverse linguistic backgrounds. In a globalized medical field, effective Latin

ActaCAMU
№7 (7) 2024
ISSN: 2181-4155

instruction is essential for mastering complex terminology. Integrating these evidence-based approaches into curricula equips students with the tools needed for academic and professional success.

References

1. Maltseva, S. M., Bystrova, N. V., Voronkova, A. A., Stroganov, D. A., & Khizhnaya, A. V. (2021). Medical and Pedagogical Aspects of Learning Latin in Modern Medical University. Siberian Journal of Life Sciences and Agriculture, 13(6), 229-244. https://doi.org/10.12731/2658-6649-2021-13-6-229-244
2. Pshenychna, M., Heorhievska, V., & Khaustova, M. (2023). Problems of Teaching Latin To Foreign Medical students and ways to solve them. Zhytomyr Ivan Franko state university journal. Pedagogical sciences, (1 (112)), 76-87.
3. Yavorskaya, O. A., Ogorodnikova, E. Yu., & Shubina, A. Yu. (2021). Specifics of blended teaching of Latin to foreign students in an intermediary language at a Medical University. Modern Problems of Science and Education, 2, 79-88. https://doi.org/10.17513/spno.30718
4. Zengin, B., Erdogan, A. R., & Akalin, S. (2007). Acquisition of Latin roots with implications for EAP. Journal of Language and Linguistics Studies, 3(1), 11-31.