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Teaching vocabulary through the Lexical Approach: strategies for first- and second-year undergraduate students

The development of lexical competence is widely recognized as one of the fundamental components of language acquisition. Consequently, expanding students' vocabulary remains a primary objective in foreign language pedagogy. Mastering linguistic units involves not only memorization of grammatical structures but also a deep understanding of their semantic and functional properties, as well as their practical use in communication. Given the contemporary status of English as a global lingua franca, enriching the learners' lexical repertoire has assumed paramount importance in modern language pedagogy. Developing proficiency in collocations is crucial for students aiming at advanced language mastery, as these structures simultaneously improve both grammatical precision and conversational fluency. Within this framework, classroom tasks should no longer be confined to passive, isolated word memorization, but rather act as dynamic tools that help undergraduate students notice and internalize formulaic structures.

This article examines the methods of vocabulary acquisition in English language classes at the lower levels of higher education (first- and second-year undergraduate students), as well as contemporary pedagogical approaches and effective teaching methods. Within the scope of this study, particular emphasis is placed on the pivotal role of the Lexical Approach in vocabulary mastery.

Keywords: vocabulary repertoire, lexical competence, communicative method, contextual learning, the Lexical Approach, vocabulary acquisition, lexical chunks, collocation.

Introduction

The mastery of a foreign language is inextricably linked to the continuous expansion and refinement of learners' vocabulary. In modern higher education, preparing first- and second-year undergraduate students requires a pedagogical shift from traditional mechanical instruction toward more integrative methods. As English solidifies its role as a global language, contextual word combinations have become the cornerstone of modern language pedagogy. This article investigates how the principles of the Lexical Approach can be systematically implemented to transition early-stage university students from passive language recognizers to fluent, active communicators.

Theoretical Foundations of Vocabulary Acquisition

Insights from contemporary research in linguistics and pedagogy indicate that vocabulary acquisition yields significantly better outcomes when driven by semantic mapping and contextual interpretation, rather than mechanical rote learning. A comparison of traditional and modern methods of vocabulary acquisition reveals that, for many years, English language teaching based on the **Grammar-Translation Method** presented words primarily in the form of lists and taught them through direct translation into the learners' native language. Although this method may offer short-term retention, it inherently fails to facilitate the consolidation of linguistic data into the learners' long-term memory.

Emerging in the latter half of the 20th century and now serving as the core of modern educational frameworks, the Communicative Approach fundamentally reshaped the traditional paradigms of foreign language teaching. In their seminal work, "Approaches and Methods in Language Teaching", renowned methodologists Jack C. Richards and Theodore S. Rodgers emphasize that the primary principle of the Communicative Approach is to teach language not as a collection of static grammatical rules, but rather as a dynamic and functional means of human interaction. The authors maintain that language acquisition is significantly

accelerated when classroom activities mimic authentic communication [1; 91], further suggesting that internalizing linguistic structures relies heavily on how personally relevant and meaningful the content is to the student [1; 90]. Within this approach, lexical material must not be introduced through artificial constructs; instead, it ought to be contextualized within real-life communicative situations (social contexts) and directly linked to speech activities.

Methods and Materials

These functional principles introduced by the Communicative Approach marked the beginning of a new stage in foreign language teaching methodology and directly stimulated the emergence of the Lexical Approach. The Lexical Approach is a modern methodological orientation that highlights the central role of vocabulary in foreign language teaching. Systematically developed in the 1990s by the British linguist Michael Lewis, this approach places vocabulary at the core of communicative competence. Grounded in the communicative philosophy of “authenticity and contextual learning”, the Lexical Approach rejects the notion that language is merely an accumulation of isolated, abstract words. Instead, it views language as a synthesis of multi-word lexical units, specifically collocations, fixed expressions, and semi-fixed expressions. Consequently, it advocates teaching vocabulary within meaningful contexts and as ready-made lexical chunks rather than as isolated lexical items. This methodological principle enables learners to communicate more fluently, naturally, and effectively in real-life communicative situations.

Theoretical and Practical Foundations of the Lexical Approach

According to Michael Lewis, the foundation of language is not grammatical structures but rather “lexical units” — namely, word combinations, fixed phrases, and ready-made speech patterns. Under this paradigm, his groundbreaking maxim asserts: “Language consists of grammaticalised lexis, not lexicalised grammar” [2; 89]. This means that in the natural speech process, people do not recall grammatical rules every time and connect words to each other with chain-like links; on the contrary, the brain processes ready-made lexical patterns stored as a whole in memory beforehand and immediately transfers them to speech. This idea is widely explained in his famous book “The Lexical Approach” [2; 8].

The theoretical foundations of the Lexical Approach are based on computer analyses in corpus linguistics and research on memory in psycholinguistics. Corpus linguistics demonstrates that in natural speech, words are not used randomly, but in the form of certain combinations known as lexical units. As M. Lewis argues, fluency is based on acquiring a large store of fixed or semi-fixed prefabricated items that can support linguistic novelty and creativity [3; 15]. Other contemporary methodologists, including Michael Swan, have extensively examined lexical combinations occurring in natural discourse and classified them according to their structural and semantic characteristics. In this article, we will focus on three of the most significant categories:

Collocations

Fixed expressions

Semi-fixed expressions

Each of these categories deserves separate consideration. In combinations like collocations, which are called *conventional word combinations* in some books, words form a typical compatibility with each other and combine naturally in a certain context. For example: *make a decision, strong tea, heavy rain*.

Michael Swan gives the explanation of collocations in an easier way as follows: “We can talk about *a burning desire* or *a blazing row*, but we don’t say *a blazing desire* or *a burning row*. Somebody can be *a heavy smoker* or *a devoted friend*, but not *a devoted smoker* or *a heavy friend*. Expressions like these are also idiomatic, in a sense. They are easy to understand, but not so easy for a learner to produce correctly” [4; 243].

Regarding the use of such expressions, Michael Swan writes: “One can think of many adjectives that might be used with *smoker* to say that somebody smokes a lot — for example *big, strong, hard, fierce, mad, devoted*. It just happens that English speakers have chosen to use *heavy*, and one has to know this in order to express the idea correctly. A learner who uses the wrong words for an idea like this may be understood, but he or she will not sound natural” [4; 244].

Fixed expressions are structures that exist in the language as ready-made templates, whose composition is completely unchangeable. They function as holistic units and often carry a figurative or idiomatic meaning. Examples include *by the way, as a matter of fact, in other words, at the end of the day*.

Semi-fixed expressions are functional formulas that have a certain structural framework (skeleton), but allow different words to be added inside them according to the context. Examples include *Could you please + verb...?*, *It is important to + verb...*, *The point is that + clause*.

Results and Discussion

According to the requirements of the Lexical Approach, the teaching of collocations, fixed expressions, and semi-fixed expressions in lower-level university English classes can be effectively implemented through practical classroom activities designed to develop learners' awareness and productive use of lexical chunks. As Lewis profoundly states, "teaching helps, precisely when it encourages the transition from input to intake" [3; 52]. Within this framework, classroom tasks are not merely passive exposures to language, but active tools that help students notice and internalize formulaic structures. As Boers et al. point out, "when the collocation consists of words that the learner is already familiar with (e.g. have + dream), a learner is not very likely to attend to the word combination as such" [5; 55]. This perspective directly resonates with Penny Ur's approach to vocabulary pedagogy. She notes that "the collocations typical of particular items are another factor that makes a particular combination sound 'right' or 'wrong' in a given context. So, this is another piece of information about a new item which it may be worth teaching" [6; 61].

According to Nesselhauf, proficiency in collocations has great significance for students at an advanced language level, as these structures simultaneously improve both grammatical precision and conversational fluency [7].

Consequently, higher education curricula must prioritize these multi-word lexical patterns over isolated lexical items to foster natural-sounding discourse. The following types of exercises may be used for this purpose [8]:

1. **Collocation Grid (Collocation Matrix):** This activity aims to develop students' awareness of conventional word combinations. Learners are provided with a matrix containing a number of verbs and nouns and are asked to identify the combinations that form natural collocations. For example, students may be required to distinguish between the verbs *make* and *do* in combinations such as *make a decision*, *do homework*, *make a mistake*, *do a favour*, and *make progress*. Through repeated exposure to such patterns, learners begin to perceive lexical units as complete chunks rather than as isolated words, thereby improving both fluency and lexical accuracy.

2. **Chunk Hunting (Lexical Chunk Identification):** In this activity, students are presented with a reading text or an audio recording and asked to identify lexical chunks rather than individual words. Their task is to underline or highlight fixed and semi-fixed expressions consisting of three or more words, such as *bear in mind*, *pay attention to*, *on the other hand*, or *as a result of*. This exercise encourages learners to recognize formulaic language in authentic discourse and helps them develop greater sensitivity to naturally occurring lexical patterns.

3. **Sentence Frames (Sentence Patterns):** Sentence frames are particularly effective for practicing semi-fixed expressions. Students are provided with a lexical framework and are required to complete it according to a given topic, context, or academic discipline. For example, the frame "If I am not mistaken, the main cause of the problem is..." may be completed in different ways depending on the subject under discussion. Similarly, patterns such as "It is widely believed that..." or "One of the main advantages of... is..." can be adapted to a variety of communicative situations.

This activity promotes productive language use while reinforcing the acquisition of frequently occurring lexical structures [9].

The implementation of such activities in lower-level university English courses enables learners to internalize lexical chunks more effectively and use them automatically in communicative situations. As a result, students gradually develop greater fluency, accuracy, and confidence in both spoken and written communication [10].

The analysis conducted in this study demonstrates that vocabulary acquisition in English language classes requires a comprehensive and systematic approach. Although traditional methods provide a certain foundation for lexical development, contemporary communicative and lexical approaches yield significantly more effective outcomes. Contextualized learning, spaced repetition strategies, digital technologies, and active communicative activities collectively facilitate the consolidation of lexical units into learners' long-term memory.

Implementing Michael Lewis's concept of "lexical units" at the early stages of undergraduate education enables students to acquire the language system more naturally, without excessive dependence on rigid tradi-

tional grammar rules. Storing language in the brain as formulaic speech patterns (lexical chunks) rather than through mechanical, isolated memorization significantly enhances students' communicative competence. Thus, deploying the Lexical Approach in English classes renders vocabulary learning more systematic, practical, and efficient and represents one of the key directions in modern language teaching.

Conclusions

Lexical competence constitutes a fundamental component of communicative competence. When language learners do not possess a sufficient vocabulary, they inevitably experience difficulties in expressing their thoughts accurately and fluently. Therefore, the systematic and purposeful instruction of vocabulary remains indispensable, placing the instructor in a vital guiding role throughout the selection, presentation, and consolidation phases of vocabulary teaching. To achieve optimal outcomes, lexical items should be chosen in strict accordance with students' age and language proficiency, while concurrently enhancing their intrinsic motivation. Ultimately, the teacher's strategic choice of appropriate strategies and the contextual presentation of vocabulary serve as decisive factors in shaping students' academic language skills.

Building upon these foundational insights, this research underscores that, within the specific context of higher education, vocabulary should no longer be regarded as a supplementary component of English language instruction. Instead, it must be recognized as a core structural component of the entire language learning process.

In conclusion, this article substantiates the necessity of deploying an integrative, systematic, and pedagogically sound instructional model as the primary vehicle to achieve successful vocabulary acquisition among undergraduate learners.

CRedit Author Statement

Author Babayeva V.A.: Conceptualization, methodology, writing — original draft.

Author Aliyeva A.A.: Data curation, formal analysis, writing — review and editing.

Conflict of Interest Statement

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Integration of AI technologies in teaching English to STEM students

The article focuses on examining the impact of artificial intelligence (AI) technologies on the process of teaching English in higher education and identifying the prospects for their effective integration into educational practice, particularly for students of STEM specialties. The authors consider a range of modern AI tools, including chatbots, automated writing assistants, and digital vocabulary platforms, and analyze their role in enhancing language learning outcomes. The study is based on a combination of theoretical analysis and an empirical investigation using a quasi-experimental design with control and experimental groups. The experimental group engaged in AI-supported learning over an eight-week period, while the control group followed traditional instructional methods. The data collected during the research point to a positive effect of AI-supported instruction on students' English language development. Improvements were observed across all language competencies examined, and the statistical analysis confirmed that these changes were significant. The results also indicate that AI-based tools can enrich the learning process by providing individualized support, increasing student engagement, and creating more opportunities for meaningful language practice. The authors conclude that the successful implementation of AI requires its systematic integration into traditional teaching approaches and adaptation to the individual needs of learners.

Keywords: artificial intelligence, English language teaching, STEM students, AI-based learning, digital education, language acquisition, educational technology, adaptive learning systems, automated feedback.

Introduction

Artificial intelligence (AI) has become an important part of higher education and has influenced teaching and learning practices across many disciplines. In recent years, educational institutions have adopted AI technologies to improve instructional quality, increase student engagement, and support personalized learning. English language education is among the fields that experience substantial changes due to the use of AI-based tools and applications. These technologies provide new opportunities for language instruction through automated feedback, adaptive learning systems, and interactive communication platforms [1]. The integration of AI technologies into English language teaching is particularly important for students in science, technology, engineering, and mathematics (STEM) disciplines. English serves as the dominant language of scientific communication, research publication, and international collaboration. Therefore, STEM students require advanced language skills to access scientific knowledge, communicate technical information, and participate effectively in academic and professional environments. AI technologies can support these requirements by providing personalized learning experiences and facilitating the development of both linguistic and digital competencies [2]. Recent technological advances have introduced various AI tools into language education. These tools include chatbots, voice assistants, automated writing assistants, intelligent assessment systems, and digital vocabulary platforms. Such technologies provide immediate feedback, adaptive content, and opportunities for independent learning. As a result, students can practice language skills beyond the classroom and receive continuous support throughout the learning process [3]; [4]. Chatbots and AI-based conversational systems are widely used to improve speaking and listening skills. These tools simulate authentic communication situations and allow students to practice English in a low-pressure environment. Through repeated interaction, learners can improve pronunciation, fluency, and communication confidence. Studies indicate that AI-supported speaking platforms increase student engagement and encourage auto-

mous language learning [5], [6]. Automated writing assistants represent another important application of AI in English language education. These systems evaluate written texts and provide feedback on grammar, vocabulary, sentence structure, coherence, and style. Such feedback assists students in identifying weaknesses and improving the quality of their written work. Intelligent assessment systems also support more efficient evaluation processes and provide individualized guidance for language development. Research demonstrates that AI-assisted writing tools contribute to improvements in academic writing performance and overall language proficiency [2; 169].

Digital vocabulary platforms also support English language learning through adaptive and personalized instruction. These systems identify learners' needs and provide customized vocabulary exercises that promote effective acquisition and retention of language knowledge. For STEM students, such platforms are especially valuable because they facilitate the learning of technical terminology and discipline-specific vocabulary that are necessary for academic success and professional communication [7], [8]. The educational benefits of AI extend beyond language acquisition. Research indicates that AI-supported learning environments contribute to the development of both linguistic and digital skills. Researchers report significant improvements in language competence and digital literacy among university students who use AI-based learning tools. These findings are particularly relevant for STEM education because digital competence is closely associated with academic achievement and future employability. AI systems also support personalized learning by adapting educational content to individual proficiency levels and learning needs [3; 898]; [4; 1363].

Furthermore, AI technologies can promote critical thinking, active participation, and academic engagement when they are integrated appropriately into instructional practices. Continuous feedback, self-assessment opportunities, and interactive learning activities encourage students to assume greater responsibility for their learning. Comparative studies indicate that AI-assisted instruction can produce positive learning outcomes and support more effective learning behaviors when combined with appropriate pedagogical guidance [5; 16]; [6; 548]. Despite these advantages, several challenges remain. One concern relates to excessive dependence on AI technologies. Students may rely on automated systems for language production and problem-solving tasks rather than developing independent language abilities. Therefore, AI should serve as a supplementary educational tool rather than a replacement for human instruction and critical thinking [9]. Additional concerns involve ethical, social, and technological issues. Researchers identify challenges related to data privacy, algorithmic bias, transparency, and unequal access to digital technologies. These issues may affect the quality and fairness of educational experiences. Consequently, educational institutions must ensure responsible and ethical implementation of AI technologies within teaching and learning environments [9; 253]. The successful integration of AI into English language education also depends on teachers' readiness and professional competence. Educators play a central role in selecting, implementing, and evaluating AI tools. Research shows that digital literacy, technological confidence, and positive attitudes toward AI influence teachers' willingness to adopt these technologies in educational practice. Therefore, professional development programs and specialized training initiatives are required to support effective AI integration [7; 4]; [9; 254].

Given the growing importance of AI in higher education, further investigation of its role in English language teaching remains necessary. Particular attention should be directed toward STEM students because their academic and professional requirements involve both language proficiency and technological competence. Understanding the opportunities, challenges, and future prospects of AI integration can assist educators and institutions in creating more effective learning environments. Therefore, this article examines the impact of AI technologies on the process of teaching English in higher education and identifies prospects for their effective integration into educational practice, with a particular focus on students of STEM specialties. The study considers major AI tools, including chatbots, automated writing assistants, and digital vocabulary platforms, as well as the benefits and challenges associated with their educational application.

Methods and Materials

The study was conducted during the first academic term and involved 30 first-year STEM students aged 18-19 whose English proficiency ranged from A2 to B1 according to the CEFR scale. To examine the impact of artificial intelligence on language learning, the participants were divided into two equal groups. Fifteen students formed the control group and followed a conventional English for Specific Purposes (ESP) course, whereas the remaining fifteen students participated in AI-enhanced learning activities. The experimental stage of the research lasted eight weeks and was organized in three successive phases. Before the beginning of the course, all participants completed a pre-test to determine their initial level of English proficiency. The

intervention phase followed, during which different instructional approaches were applied in the two groups. At the end of the experiment, students completed a post-test that assessed the same language skills as the initial assessment, namely vocabulary knowledge, writing accuracy, and speaking fluency. Using identical evaluation criteria for both tests made it possible to compare students' progress over the course of the study.

Students in the control group continued learning through conventional classroom instruction based on the ESP curriculum, textbook activities, and teacher feedback. In contrast, the experimental group regularly used AI-supported learning tools as part of their classroom and independent work. Speaking practice was carried out with conversational chatbots, written assignments were revised using automated writing assistants, vocabulary was reinforced through digital applications employing spaced repetition, and pronunciation was practised with speech-recognition software. To complement the test results, students in the experimental group also completed a short questionnaire that explored their learning experience, motivation, and opinions about using AI technologies in English classes.

The effectiveness of the intervention was evaluated using several sources of evidence, including pre-test and post-test scores, questionnaire responses, and classroom observations. The quantitative data were analysed with descriptive statistics, while differences between the control and experimental groups were examined using an independent-samples t-test. Statistical significance was established at $p < 0.05$. The analysis showed that students who learned with AI tools achieved significantly better results than those in the control group ($p < 0.01$). To improve the consistency of the study, both groups completed equivalent tasks and were assessed according to the same scoring criteria. Participation was voluntary, and all information collected during the research remained confidential and was used only for academic purposes.

Results and Discussion

A comparison of the pre-test and post-test scores showed that students made progress in all of the language skills assessed during the experiment, including vocabulary, writing, and speaking. The largest improvement was found in vocabulary knowledge. Before the intervention, the average score was 61 %, whereas after eight weeks of AI-supported instruction it increased to 82 %, representing an overall improvement of 21 percentage points. The statistical analysis confirmed that the difference between the two measurements was significant (paired-samples t-test, $p < 0.01$) (Fig. 1). These results suggest that the observed progress was associated with the integration of AI tools into the learning process rather than with random variation.

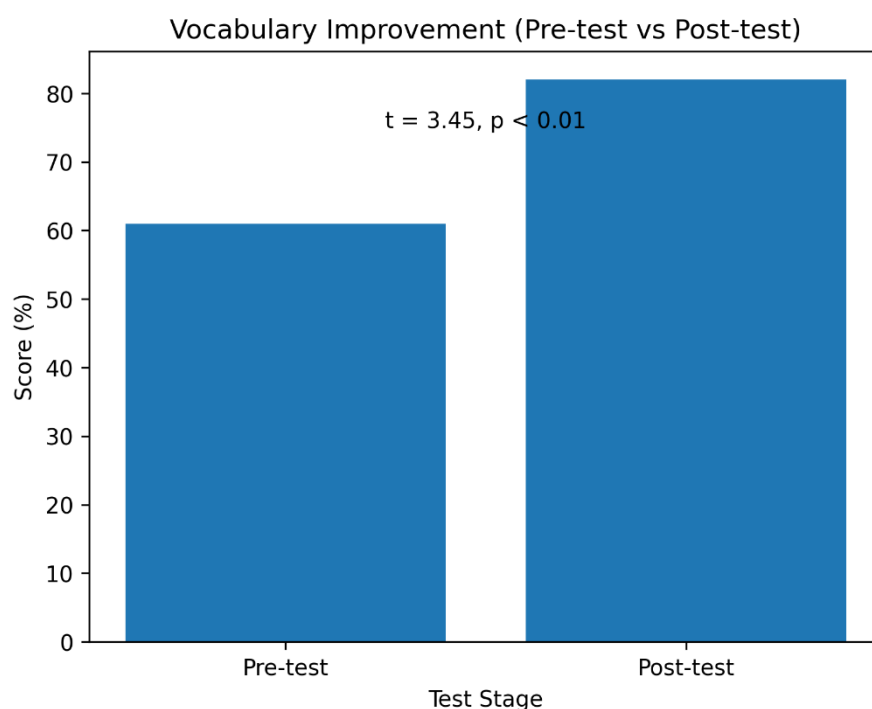


Figure 1. Vocabulary improvement (Pre-test vs Post-test)

The improvement in vocabulary can largely be linked to the regular use of AI-supported learning applications. These platforms enabled students to practise independently, revisit difficult words, and receive exer-

cises adapted to their current level of knowledge. As the experiment progressed, many students showed greater confidence in using newly learned words and were able to apply subject-specific terminology more accurately in different language tasks. This is especially relevant for STEM students, whose future academic and professional activities require a solid command of specialized English vocabulary. Unlike traditional classroom instruction, AI-based applications provide continuous practice and individualized support, making vocabulary learning more efficient and better suited to students' needs.

Improvements were evident not only in vocabulary, but also in students' writing skills. According to the obtained results, grammatical accuracy improved by approximately 28 %, whereas lexical diversity increased by 25 %. One possible explanation for these gains is the use of automated writing assistants, which provided immediate feedback and enabled students to revise their work more effectively. Unlike traditional teacher correction, which is often delayed, AI-based tools offered instant suggestions and encouraged students to reflect on their mistakes. Nevertheless, it should be emphasized that automated feedback cannot fully replace the teacher's role. In our view, excessive dependence on such technologies may reduce students' ability to analyse language independently; therefore, AI tools should be used as a supplement rather than as a substitute for traditional instruction.

Similar trends were identified in the development of speaking skills. The analysis showed a 24 % increase in speaking fluency, while students' confidence in oral communication improved by nearly 30 %. These results can be associated with the use of AI chatbots and speech-recognition technologies, which provided opportunities for regular speaking practice in a stress-free environment. Many students reported that interacting with AI systems reduced their fear of making mistakes and encouraged them to participate more actively in communicative tasks. Immediate feedback on pronunciation and unlimited opportunities for practice also appeared to contribute to the improvement of oral performance (Fig. 2).

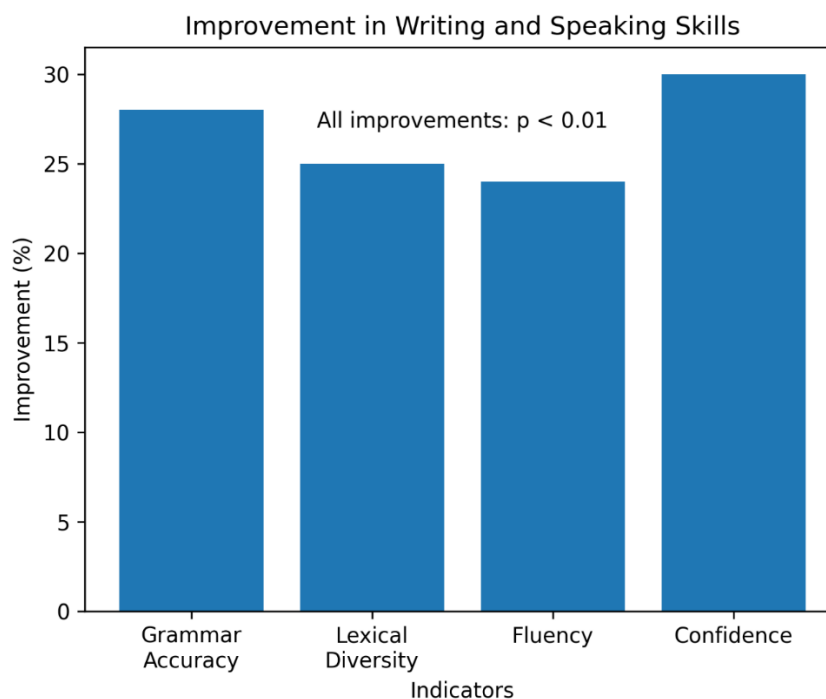


Figure 2. Improvement in writing and speaking skills

The data demonstrate that the use of AI technologies had a positive impact on different aspects of language learning. Significant progress was observed not only in vocabulary acquisition but also in writing and speaking skills, with all differences being statistically significant at $p < 0.01$. These results suggest that AI tools support the development of communicative competence in a comprehensive manner rather than improving isolated language components.

The survey conducted among the participants also shed light on students' perceptions of AI-assisted language learning. Most students expressed favourable opinions regarding the use of AI technologies in English classes. In particular, 91 % of respondents reported higher levels of motivation, while 87 % believed that

AI tools helped them learn more effectively. Moreover, 89 % indicated that they would like such technologies to remain part of the learning process in the future. These responses suggest that AI-based learning environments are perceived positively by students and may contribute to increased engagement.

The findings obtained in this research are generally in line with previous research emphasizing the benefits of artificial intelligence in language education. Our results support the idea that combining several AI tools within one instructional framework can support multiple language skills. The simultaneous use of chatbots, automated writing assistants, vocabulary platforms, and speech-recognition systems appears to create favourable conditions for the development of different language skills.

At the same time, several limitations should be acknowledged. First, AI technologies should not be regarded as a replacement for teachers, whose role remains crucial in organizing the learning process and supporting students. Second, the effectiveness of AI largely depends on the way these tools are integrated into classroom practice. Finally, the present study involved a relatively small number of participants, which limits the generalizability of the findings. Further studies involving larger samples would provide a more comprehensive understanding of the role of AI in language learning.

Despite these limitations, the study highlights the considerable potential of artificial intelligence for teaching English to STEM students. The use of adaptive learning systems, automated feedback, and interactive communication tools makes the learning process more flexible and learner-centred. Therefore, AI technologies may become an important component of modern foreign language education and contribute to improving the quality of language training in higher education institutions.

Conclusions

Taken together, the results suggest that AI technologies can be a valuable addition to English language teaching for STEM students. During the eight-week experiment, students improved their performance in vocabulary, writing, and speaking, with vocabulary showing the greatest progress. The statistical analysis confirmed that these changes were significant. This suggests that combining AI-supported activities with traditional classroom instruction creates more favourable conditions for language learning than relying on conventional methods alone.

An important observation from the research was that the combination of several AI-based applications provided complementary support across different language skills. Each technology addressed a particular aspect of language learning, and together they provided students with varied opportunities to practise vocabulary, writing, speaking, and pronunciation. By providing immediate feedback and opportunities for individualized practice, these technologies helped students become more engaged in the learning process and increased their motivation to study English.

At the same time, the study supports the view that artificial intelligence should be regarded as an additional educational resource rather than a replacement for the teacher. Effective learning still depends on pedagogical guidance, well-designed learning activities, and meaningful interaction between teachers and students. Therefore, the successful implementation of AI technologies requires their thoughtful integration into existing teaching practices.

The findings highlight the considerable potential of artificial intelligence for improving English language instruction in technical universities. As digital technologies continue to develop, AI-based tools may become an important component of modern language education and contribute to preparing STEM students for academic and professional communication in an increasingly globalized world.

CRedit Author Statement

Zh.M. Tentekbayeva: Conceptualization, Methodology, Validation, Formal analysis, Investigation, Data curation, Writing — original draft preparation.

A. Mosavi: Conceptualization, Methodology, Validation, Resources, Supervision, Writing — review and editing.

Both authors approved the final version of the manuscript.

Conflict of Interest Statement

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Mentoring as a Factor of Professional Adaptation among Early-Career Foreign Language Teachers in Higher Education

The present study examines the role of mentoring in the professional adaptation of early-career foreign language teachers working in higher education institutions. Data were collected through an online questionnaire administered to 90 early-career foreign language teachers from Russian universities. The online questionnaire was used to explore the early-career foreign language teachers' mentoring experiences and measured several aspects of their professional adaptation which include teaching confidence, understanding of institutional requirements, workload management, relationships with colleagues, and overall satisfaction with their professional adaptation. Descriptive statistics and an independent-samples Student's *t*-test were used to analyze the data. The findings revealed that only 21 participants had had mentors during their first years of university employment. They demonstrated significantly higher levels of professional adaptation ($M = 4.24$, $SD = 0.51$) than those without mentors ($M = 3.33$, $SD = 1.11$); the difference was statistically significant. The largest differences were observed in teaching confidence, understanding institutional requirements, integration into the university community, and satisfaction with professional adaptation. The results highlight the importance of mentoring as an effective mechanism for supporting the successful adaptation of early-career foreign language teachers and suggest the need for strengthening mentoring practices in higher education institutions.

Keywords: mentoring, professional adaptation, early-career faculty, foreign language university teachers, higher education, professional development, job satisfaction, dimensions of professional adaptation.

Introduction

The successful adaptation of early-career university teachers is a critical factor influencing the quality of higher education and the professional development of academic staff. Entering the academic profession involves not only mastering teaching responsibilities but also adapting to institutional expectations, engaging in research activities, fulfilling administrative duties, and establishing professional relationships within the academic community. The transition from graduate student or novice instructor to independent university teacher is often accompanied by professional, organizational, and psychological challenges that may affect job satisfaction, performance, and long-term career commitment [1], [2].

These challenges may be particularly pronounced for foreign language teachers working in higher education. In addition to general academic responsibilities, they are expected to teach through communicative and student-centered approaches, assess language proficiency, integrate digital resources, and continuously develop their own linguistic and intercultural competence. Early-career foreign language teachers must also adapt to rapidly changing educational environments and increasing demands for innovation in language teaching. As a result, the first years of academic employment often represent a crucial period of professional socialization and identity formation [3].

Previous studies have identified mentoring as one of the most effective mechanisms for supporting novice teachers during the adaptation process [4], [5]. Mentoring provides opportunities for professional guidance, emotional support, knowledge sharing, and integration into institutional culture. Research conducted in various educational contexts has demonstrated that mentoring can enhance teaching confidence, facilitate professional learning, reduce occupational stress, and improve retention among early-career educators. In higher education, mentoring has also been associated with increased research productivity, stronger collegial relationships, and greater career satisfaction [6].

Despite growing international interest in mentoring practices, limited attention has been paid to the role of mentoring in the professional adaptation of early-career foreign language teachers in higher education, particularly within the context of Russia. Existing studies have primarily focused on school teachers or university faculty in general, while the specific experiences and adaptation needs of foreign language instructors remain underexplored. This gap highlights the need for further empirical research examining how mentoring contributes to the successful professional adaptation of early-career foreign language teachers and their integration into academic environments.

The aim of this study is to examine the role of mentoring in the professional adaptation of early-career foreign language teachers working in higher education institutions. In particular, this study identifies the challenges that early-career foreign language teachers face, determines the forms of mentoring support provided by mentors, as well as presents the analysis of adaptation levels that teachers who have experienced mentoring and those who have not demonstrated. These findings are expected to contribute to the understanding of mentoring practices and their role for early-career foreign language teachers working within higher education institutions.

The research question is the following: How does mentoring support the professional adaptation of early-career foreign language teachers in higher education?

The hypothesis is that early-career university teachers who received mentoring support demonstrate significantly higher levels of professional adaptation than those who did not receive mentoring support.

Literature Review

Mentoring in Higher Education

Mentoring has become an increasingly important component of professional development in higher education, particularly for early-career academics who are required to navigate complex teaching, research, and administrative responsibilities. Although mentoring is widely implemented across universities, researchers note the absence of a universally accepted definition and a lack of conceptual consistency in the literature [5; 3], [7], [8], [9]. A systematic review conducted by Nuis et al. analyzed 106 studies and concluded that mentoring in higher education encompasses both professional and psychosocial support aimed at facilitating personal and professional growth within academic environments. The authors also emphasized the importance of structured mentoring relationships, mutual trust, and knowledge sharing for successful mentoring outcomes [5; 4].

The significance of mentoring for novice academics has been highlighted across various disciplinary contexts [10], [11], [12], [13]. Reviewing studies on early-career researchers, Boeren et al. found that mentoring contributes to career development, professional identity formation, academic productivity, and psychosocial well-being [14]. Mentoring relationships provide access to institutional knowledge, professional networks, and informal guidance that may not be available through formal induction programs [15].

Similarly, Dahlke et al. demonstrated that mentoring plays a crucial role in supporting novice faculty members during their transition into academic teaching. Their integrative review identified two major functions of mentoring: socialization into academic culture and assistance in navigating institutional expectations. The authors concluded that formal mentoring programs can facilitate professional integration and enhance confidence among newly appointed faculty members [4].

Professional Adaptation of Early-Career University Teachers

Professional adaptation refers to the process through which novice academics acquire the knowledge, skills, values, and behaviors necessary for successful functioning within higher education institutions. The transition into academic employment often involves multiple challenges, including mastering teaching responsibilities, understanding institutional procedures, balancing research and teaching obligations, and developing collegial relationships [13; 1302], [15; 29], [4; 207].

Recent research indicates that early-career faculty frequently experience difficulties associated with workload management, role ambiguity, and professional identity development [6; 355, 362, 367]. Studies on novice university teachers have shown that adaptation is influenced not only by individual competencies but also by organizational support, collegial relationships, and institutional culture [15; 29]. Effective support mechanisms are therefore considered essential for successful integration into academic communities [5; 4].

In the context of higher education, adaptation is increasingly viewed as a multidimensional construct involving professional, organizational, and social dimensions [5; 5]; [4; 208]. Successful adaptation has been associated with higher job satisfaction, stronger professional commitment, and improved teaching effectiveness, whereas inadequate support during the early stages of an academic career may contribute to stress, dissatisfaction, and turnover intentions [4; 208].

Specific Challenges of Foreign Language Teachers in Higher Education

While novice academics across disciplines encounter common adaptation challenges, foreign language teachers face several additional professional demands [6; 354, 363]. Their work requires continuous development of linguistic, intercultural, methodological, and digital competencies, alongside the implementation of communicative and learner-centered teaching approaches. Foreign language instructors are also expected to create authentic learning environments and integrate innovative technologies into language education [6; 354, 363].

Research on the professionalization of university foreign language teachers suggests that the initial stages of academic employment are often characterized by methodological uncertainty, difficulties balancing teaching and research responsibilities, and challenges related to professional self-development. Young language instructors frequently report the need for guidance in curriculum design, assessment practices, classroom management, and academic publishing [6; 356, 363], [4; 208].

Recent studies in language teacher education further emphasize the importance of supportive mentoring relationships. Montgomery et al. argue that mentoring contributes not only to professional learning but also to teacher well-being by providing emotional support, fostering reflective practice, and helping novice educators navigate institutional demands. Their findings suggest that mentoring may be particularly valuable in language education contexts where professional identity and interpersonal interaction play a central role in teaching practice [6; 356, 365–367].

Research Gap

Despite the growing body of literature on mentoring and faculty development, empirical studies examining the role of mentoring in the professional adaptation of early-career foreign language teachers remain limited. Existing research has primarily focused on school teachers, pre-service teachers, or university faculty in general, with relatively little attention devoted to foreign language instructors working in higher education institutions. Furthermore, studies conducted in the context of Russia are scarce, despite ongoing reforms in higher education and increasing expectations placed on university faculty.

Taking these gaps into account, there is a need for further study of how mentoring influences the professional adaptation of early-career foreign language teachers and which forms of mentoring support are considered to be the most beneficial. In order to reduce the gap, this study presents the results of examining the correlation between mentoring experiences and professional adaptation of early-career foreign language teachers working in Russian universities.

Methods and Materials

Research Design

This study employed a quantitative cross-sectional survey design. Its aim is to examine the role of mentoring in the professional adaptation of early-career university foreign language teachers. A survey method was selected because it allows for the collection of standardized data from a relatively large group of respondents and facilitates the analysis of adaptation-related factors across different institutional contexts.

Participants

The participants were early-career university foreign language teachers employed at higher education institutions in Russia. For the purposes of this study, early-career foreign language teachers were defined as academic staff with up to five years of teaching experience in higher education. Participants were recruited through purposive and voluntary sampling. The survey link was distributed via professional networks, institutional mailing lists, and social media platforms used by university teachers. The study collected demographic information including gender, age, academic position, and teaching experience.

Research Instrument

Data were collected using an online questionnaire developed specifically for this study. The questionnaire consisted of four sections. The first section gathered demographic information about the respondents. The second section explored participants' mentoring experiences, including the availability of mentors, the frequency of interaction, and the types of support provided. The third section measured professional adaptation using nine statements evaluated on a five-point Likert scale ranging from 1 ("Strongly disagree") to 5 ("Strongly agree"). The statements assessed various dimensions of adaptation, including teaching confidence, understanding of institutional requirements, workload management, collegial relationships, integration into the academic community, and professional self-confidence. The fourth section included open-ended questions that allowed participants to describe challenges encountered during their first years of university teaching and to provide their perspectives on effective mentoring practices. Prior to distribution, the ques-

tionnaire was reviewed by experts in higher education and educational research to ensure content validity and clarity of wording.

Data Collection Procedure

Data were collected electronically using Google Forms during the spring semester of the 2026 academic year. Participation was voluntary and anonymous. Respondents were informed about the purpose of the study and provided informed consent before completing the questionnaire. No personally identifiable information was collected.

Data Analysis

Quantitative data were analyzed using descriptive and inferential statistical methods. Descriptive statistics, including percentages, means, and standard deviations, were calculated to summarize participants' demographic characteristics, mentoring experiences, and adaptation levels. To evaluate professional adaptation, a composite adaptation score was calculated by averaging responses to the nine Likert-scale items. To examine the role of mentoring, respondents were divided into two groups: those who had experienced mentoring and those who had not. Differences between groups were analyzed using an independent-samples Student's t-test. The calculated t-value (3.63) exceeded the critical t-value (1.98), indicating a statistically significant difference at $p < 0.05$. This indicated the effectiveness of mentorship for the professional adaptation of early-career university foreign language teachers.

Responses to open-ended questions were analyzed using thematic analysis. Similar responses were grouped into categories representing common challenges and perceived benefits of mentoring.

Ethical Considerations

The study adhered to ethical principles of educational research. Participation was voluntary, respondents could withdraw at any time, and all collected information was treated confidentially. Data were used exclusively for academic research purposes.

Results and Discussion

Participant Characteristics

A total of 90 early-career university foreign language teachers participated in the study.

Among the respondents, 58 were female and 32 were male. The majority of participants were aged between 24–29 years. Regarding teaching experience, 18 had less than one year of experience, 49 had between one and three years, and 23 had between four and five years of experience. Most participants held the position of lecturer (67), followed by senior lecturer (23) and assistant professor (0). Table 1 presents the demographic characteristics of the sample.

Table 1

Demographic Characteristics of Participants

Variable	Category	n	%
Gender	Female	58	64.4
	Male	32	35.6
Teaching Experience	Less than 1 year	18	20
	1–3 years	49	54.4
	4–5 years	23	25.6

Among the respondents, 21 reported having a mentor during their first years of university employment, whereas 69 indicated that they had no mentoring support. Regarding the frequency of interaction, 7 communicated with their mentors weekly, 9 monthly, and 5 only a few times per semester.

The most frequently reported forms of support included teaching and instructional guidance (14), research-related assistance (9), and emotional support (4), as demonstrated in Table 2. Participants who had mentoring experience generally evaluated mentoring positively — more than 80 % of respondents assessed mentoring as effective or very effective.

Table 2

Types of Mentoring Support Received

Type of Support	n	%
Teaching support	14	66.7
Research guidance	9	42.9
Emotional support	4	19
Administrative support	3	14.3
Career advice	1	4.8

Professional Adaptation Levels by Mentoring Status

To examine the role of mentoring in professional adaptation, respondents were divided into two groups: those who had experienced mentoring ($n = 21$) and those who had not ($n = 69$). Overall, participants who had mentors reported higher levels of professional adaptation across most indicators. The highest scores in the group who had a mentor were observed in confidence in teaching (4.52), understanding institutional requirements (4.48), and integration into the university community (4.43). The lowest scores were for balancing teaching, research, and administrative responsibilities (3.95) and workload management (4.00), which may be due to lack of experience. The group without a mentor demonstrated the highest scores for the ability to seek support when needed (3.90), workload management (3.77), and communication with colleagues (3.70), which were still lower than the corresponding scores in the group with a mentor. The lowest scores were observed for satisfaction with professional adaptation (2.80) and balancing teaching, research, and administrative responsibilities (2.91). Table 3 presents the mean score and standard deviation (SD) for each adaptation indicator.

Table 3

Professional Adaptation Scores by Mentoring Status

Adaptation Indicator	Group	With mentor		Without mentor	
		Mean	SD	Mean	SD
Confidence in teaching		4.52	0.51	3.01	1.16
Understanding institutional requirements		4.48	0.51	3.32	1.14
Workload management		4.00	0.55	3.77	1.05
Communication with colleagues		4.24	0.54	3.70	1.06
Integration into university community		4.43	0.51	3.42	1.09
Professional future confidence		4.33	0.58	3.17	1.19
Ability to seek support when needed		4.10	0.62	3.90	1.02
Balancing teaching, research, and administrative responsibilities		3.95	0.50	2.91	1.17
Satisfaction with professional adaptation		4.10	0.30	2.80	1.13
Overall adaptation score		4.24	0.51	3.33	1.11

Differences between Teachers with and without Mentors

The comparison of professional adaptation scores revealed notable differences between early-career university foreign language teachers who had mentoring support and those who did not. Overall, respondents with mentors demonstrated a substantially higher level of professional adaptation ($M = 4.24$, $SD = 0.51$) than their counterparts without mentors ($M = 3.33$, $SD = 1.11$). In particular, the largest gaps were observed in confidence in teaching ($M = 4.52$ vs. 3.01), satisfaction with professional adaptation ($M = 4.10$ vs. 2.80), confidence in professional future ($M = 4.33$ vs. 3.17), understanding institutional requirements ($M = 4.48$ vs. 3.32), and integration into the university community ($M = 4.43$ vs. 3.42). These findings suggest that mentoring plays a significant role in helping early-career teachers adapt to the university environment and to their new professional role, because the different forms of mentoring they received enhanced several aspects of professional adaptation.

Although positive differences were observed across all adaptation indicators, the smallest gaps between the two groups were found in workload management ($M = 4.00$ vs. 3.77) and the ability to seek support when needed ($M = 4.10$ vs. 3.90). This may indicate that some aspects of adaptation are influenced not only by mentoring but also by broader institutional and organizational factors. In addition, respondents without mentors consistently demonstrated higher standard deviations across most indicators, reflecting greater variability in their adaptation experiences. In contrast, teachers who had mentors reported more homogeneous responses, which may imply that mentoring contributes not only to higher adaptation levels but also to a more stable and predictable adaptation process during the first years of their academic careers.

Qualitative Findings

Analysis of the responses to the open-ended questions in the questionnaire revealed three major themes related to adaptation challenges.

Challenge 1: Dealing with Many Professional Responsibilities. The majority of the participants reported difficulties in balancing teaching, research, and administrative tasks during their first years of work.

Challenge 2: Managing Institutional Requirements. Most of the respondents mentioned that they felt uncertain due to numerous university procedures, documentation, and performance requirements.

Challenge 3: Lack of Emotional and Professional Support. The participants emphasized that they needed someone's help in reducing stress, increasing their confidence, and facilitating their adaptation to the academic community.

Altogether, both the qualitative findings and the quantitative results correspond to each other as they highlight the practical value of mentoring in supporting the professional adaptation of early-career teachers within the university work environments.

The findings of this study confirm the hypothesis that mentoring plays an important role in professional adaptation of early-career foreign language teachers working in higher education. Respondents who had mentoring support demonstrated higher levels of adaptation across all measured indicators, particularly in teaching confidence, understanding institutional requirements, integration into the university community, and confidence in their professional future. These results are consistent with previous studies emphasizing that mentoring facilitates professional socialization, enhances self-efficacy, and supports novice academics in navigating institutional and professional challenges [14; 69], [4; 206]. The findings also support the view that mentoring serves not only as a mechanism for transferring professional knowledge but also as a source of emotional and psychosocial support during the early stages of an academic career.

The results are particularly relevant for foreign language teachers, whose professional responsibilities extend beyond general teaching duties and include the development of communicative competence, the integration of innovative teaching approaches, and continuous professional self-improvement. The relatively large gaps observed between teachers with and without mentors suggest that mentoring may help early-career foreign language teachers develop confidence in their pedagogical practices and adapt more effectively to the requirements of higher education institutions. At the same time, both groups reported lower scores related to balancing teaching, research, and administrative responsibilities, which indicates that workload management remains a common challenge for any early-career foreign language teacher — with or without a mentor. This may imply that mentoring should be complemented by broader institutional support measures aimed at reducing adaptation-related stress and facilitating the professional development of early-career foreign language teachers.

Conclusions

This study examined the role of mentoring in the professional adaptation of early-career foreign language teachers working in higher education institutions. The findings revealed that teachers who had mentors demonstrated higher levels of professional adaptation than those who did not. The most substantial differences were observed in teaching confidence, understanding institutional requirements, integration into the academic community, and overall satisfaction with professional adaptation. These results indicate that mentoring is an effective mechanism for supporting novice academics during their transition into university teaching.

The study highlights the need for higher education institutions to strengthen formal mentoring programs and provide systematic support for early-career foreign language teachers. Universities should encourage experienced faculty members to participate in mentoring initiatives and create opportunities for professional collaboration and knowledge sharing. Although the present study contributes to understanding the relationship between mentoring and professional adaptation, it is limited by its sample size and reliance on self-

reported data. Future research could involve larger samples from different regions and employ longitudinal designs to examine the long-term effects of mentoring on professional development, job satisfaction, and academic performance.

CRedit Author Statement

The author confirms that they are the sole creator of this work and bear full responsibility for its content.

Conflict of Interest Statement

The author declares that she has no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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The Impact of a Gamified Platform on Vocabulary Acquisition in EFL Learners

This article examines how the use of Mondly, a gamified mobile language-learning application, influences the acquisition of selected English vocabulary among first-year university students with beginner and elementary proficiency levels. The study was conducted in a formal EFL learning context and focused both on measurable vocabulary gains and on learners' perceptions of mobile gamified practice. A pre-experimental one-group design was applied. Twenty students completed a Vocabulary Knowledge Scale before and after a four-week period of guided Mondly practice. The primary objective was to assess the effectiveness of the platform in enhancing lexical knowledge and to identify student attitudes towards this gamified approach compared to traditional approaches to vocabulary development. Data were collected using a Vocabulary Knowledge Scale (VKS), administered pre- and post-intervention, and a post-intervention questionnaire to ascertain student motivation, enjoyment and overall preference. The results indicate that structured use of Mondly may support vocabulary development, especially when it is integrated as a supplementary tool rather than used as a replacement for classroom instruction. The findings have implications for instructors and course designers who seek to implement digital platforms in foreign language learning to facilitate engagement and improve vocabulary learning outcomes.

Keywords: Gamification, Vocabulary Acquisition, MALL (Mobile-Assisted Language Learning), Vocabulary Knowledge Scale, EFL (English as a Foreign Language), Mondly, Technology-Enhanced Learning, Student Motivation.

Introduction

Vocabulary knowledge is one of the main conditions for successful participation in foreign-language communication. For first-year EFL students, limited lexical competence often becomes a barrier not only to speaking but also to reading, listening comprehension and written production. Even when learners understand basic grammatical structures, insufficient vocabulary restricts their ability to express ideas accurately and to interpret messages in academic and everyday contexts. D.A. Wilkins' well-known statement that communication is hardly possible without vocabulary highlights the central role of lexis in language learning. In the context of EFL instruction, this means that vocabulary should not be treated as a secondary component of the curriculum [1].

Listening requires the student to decode vocabulary in real time as it is pronounced, whereas reading requires comprehension of content while identifying and interpreting words. The learner must also retrieve and employ words when completing speaking and writing tasks. N. Schmitt (2000) emphasizes that lexical knowledge is central to communicative competence and second-language acquisition [2]. Similarly, M. McCarthy emphasizes the central role of vocabulary in effective language use [3].

In many EFL classrooms, vocabulary is still introduced through lists of isolated words, bilingual translation, repetition and memorization exercises. Although these practices can be useful at the initial stage of word recognition, they often provide limited opportunities for meaningful use. As a result, learners may remember a word for a short period but fail to retrieve it later in speaking or writing. According to N. Schmitt (2000), this limitation is particularly important for beginner-level students, who require frequent exposure, contextualized practice and motivational support [2; 133]. Lack of ongoing learner involvement is one of the biggest problems with traditional techniques [4]. While active use and constant exposure are necessary for

vocabulary retention, isolated memorization activities and repetitive exercises might eventually sap interest [4; 220].

Given that motivation and engagement are commonly acknowledged as key drivers of successful language learning by Z. Dörnyei, the inadequacy of conventional methods highlights the need for more creative and effective learning materials [5]. This disparity highlights the need to investigate a number of approaches for improving word-learning in EFL environments, especially those incorporating enjoyment, individualization and interactivity [6]. Digital gamified applications offer one possible response to these difficulties. By combining short learning tasks with points, levels, progress indicators and immediate feedback, such tools may increase the frequency of practice and make vocabulary revision less monotonous. For EFL learners, this is especially relevant because lexical growth depends on repeated encounters with words in varied contexts.

Although gamification for learning has been demonstrated to have high potential, its application within language learning has been particularly remarkable. Among the commercially successful instances is Mondly, a widely used gamified platform that incorporates multiple interactive tools for vocabulary learning. The app structures its content into bite-sized thematic lessons that resemble levels and become increasingly challenging. To sustain learner motivation, students earn points and scores for completing exercises, and their progress is tracked through visual cues such as streaks and progress bars. Mondly also makes use of interactive exercises that go beyond rote memorization; these include matching exercises, word-order drills, listening comprehension and speaking practice — some of which are enhanced by virtual reality and augmented reality (VR/AR) components. Interestingly, the system leverages spaced repetition in its review system, allowing learners to rehearse words at optimally spaced intervals, which is a long-established principle of long-term memory consolidation [7].

Mondly was selected for this study because its learning structure combines several features that are relevant to vocabulary acquisition. The application presents words and phrases through short thematic units, provides immediate feedback and encourages regular practice through visual progress indicators. Unlike traditional paper-based vocabulary tasks, Mondly allows learners to repeat lexical items in listening, matching, sentence-building and pronunciation activities. These features make it suitable for examining how mobile gamified practice may influence vocabulary learning among beginner EFL students. This research aims to investigate the impact of employing the gamified language learning application Mondly on vocabulary learning by first-year university EFL students. By exploring receptive and productive vocabulary knowledge, along with learner attitudes, the research aims to evaluate Mondly as a supplementary learning resource in formal EFL instruction.

Research Questions.

The following research questions serve as the basis for this study:

RQ1: To what extent does the use of Mondly contribute to changes in EFL students' vocabulary knowledge after a four-week intervention?

RQ2: How do students evaluate Mondly in comparison with traditional vocabulary-learning practices in terms of motivation, interest and preference?

Vocabulary knowledge is usually viewed as a multidimensional construct. At the basic level, learners may only recognize a word when they hear or read it. At a more advanced level, they can recall the word independently and use it appropriately in oral or written production. This distinction between receptive and productive lexical knowledge is important for the present study because mobile applications may support recognition and controlled practice more directly than spontaneous communicative use [4; 223].

N. Schmitt (2010) emphasizes the gradual process of vocabulary learning, stating that repeated exposure within contexts is required for learners to develop breadth and depth in knowledge [8]. The learners can proceed at their own speed and review materials as they please [9].

Deterding et al. provide a seminal definition, defining gamification as “the use of game design elements in non-game contexts”. Such design elements include points, badges, levels, challenges, leaderboards and instant feedback, all of which can be used in learning environments [10]. The educational appeal of gamification is commonly explained in the language of Self-Determination Theory (SDT), an extensively empirically grounded model of human motivation [11]. At a general level, systematic reviews have incorporated findings from different studies. As an example, Dehghanzadeh et al. examined a wide range of studies in gamification in English as a second language (ESL) learning [12].

M.H. Al-Khreshah examined teachers' perspectives on integrating ChatGPT into English language teaching [13]. Nurfadhilah et al. discussed challenges in EFL vocabulary acquisition and the use of gamified

learning strategies to improve engagement and retention [14]. D. Aco and E. Suwandi investigated the effect of gamified learning on students' motivation and vocabulary retention [15]. Y.I. Bolat and N. Taş conducted a meta-analysis of gamified-assessment tools and their effect on academic achievement in formal educational settings [16]. M.S. Mulyani and S. Suryadi provide empirical, context-specific evidence for the use of Duolingo in English language learning [17]. Their study on Indonesian EFL students measured the impact of Duolingo on learning achievement.

Loewen et al., in a study of Duolingo users, investigated language-learning outcomes associated with app use [18].

Kohnke et al. investigated mobile vocabulary-learning apps as aids to business-vocabulary knowledge retention [19]. M. Cancino and G.I. Castillo Fonseca examined the impact of a gamified approach on L2 vocabulary learning, retention and engagement [6].

Al Shihri et al. examined the effect of integrating multiple MALL applications on EFL students' academic vocabulary acquisition and learners' experiences [20]. Mihaylova et al. conducted a meta-analysis of mobile-assisted language-learning applications, finding an overall benefit for L2 learning while also identifying substantial risk-of-bias and evidence-quality limitations [21]. R. Zhang and D. Zou reviewed the modes and effectiveness of multimedia input for second- and foreign-language learning [22].

However, most studies have concentrated on well-known platforms such as Duolingo, leaving other commercially successful applications such as Mondly unexplored. This gap underscores the need for empirical investigations into how Mondly's specific gamified features contribute to vocabulary learning in EFL contexts. However, despite its prominence in the market and its distinct feature set including a strong emphasis on conversational phrases, integration of virtual and augmented reality (VR/AR) modules and a specific gamification structure there remains a notable scarcity of independent, empirical research examining the effectiveness of the Mondly application.

This absence of systematic inquiry represents a clear gap in the literature. By focusing on Mondly, this research not only extends the body of work on gamification and MALL but also provides practical insights for educators considering the integration of commercial applications into formal instruction.

Methods and Materials

This section introduces the research design, participants, materials, procedure and analysis methods employed to investigate the impact of the Mondly app on vocabulary acquisition and the assessment of user satisfaction among first-year EFL learners. This study used a one-group pre-test–post-test pre-experimental design. It was adopted in order to assess potential vocabulary knowledge changes among participants after a controlled intervention on the gamified Mondly app. As the study lacks a control group, its primary aim remains descriptive, seeking to quantify perceived learning gains and user satisfaction in a specific setting, as opposed to establishing firm causal effects.

Participants.

The participants were a convenience sample of 20 first-year students from International University of Tourism and Hospitality enrolled in the English as a Foreign Language program (10 male, 10 female). The students ranged in age from 17 to 20 years. All of the participants were at the beginner-to-elementary level (A1–A2 on the CEFR scale) as indicated by their university placement test scores. The students participated voluntarily and informed consent was obtained from all participants. Anonymity and confidentiality were guaranteed.

Materials and Equipment.

Three major tools were used in this study:

Vocabulary Knowledge Scale (VKS): A self-assessment test developed by M. Wesche and T.S. Paribakht was used to determine participants' vocabulary knowledge of 15 target words selected from the beginner lessons of the Mondly app [23]. The VKS uses a 5-point scale ranging from complete unfamiliarity to the ability to use a word correctly in a sentence: 1. I have never encountered this word before; 2. I have seen this word before, but I do not know what it means; 3. I have seen this word before and I think it means ...; 4. I know this word. It means ...; 5. I can use this word in a sentence. Scores were calculated by assigning a value from 1 to 5 to each level.

The Mondly App: The gamification-based language-learning application Mondly was used as the intervention app. Participants were asked to complete four assigned levels of the "Beginner" course, one level per week. These levels covered thematic vocabulary such as greetings, family and numbers.

User Satisfaction Questionnaire: A post-intervention questionnaire was used to assess perceptions of enjoyment, usability, perceived learning and motivation on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). Example items included “I found the gamification aspects of Mondly motivating” and “I feel that my vocabulary developed after using Mondly”.

Procedure.

The experiment took place over a period of 4 weeks under a protocol:

Week 1 (Pre-test): The goal of the study was explained and informed consent was obtained. The VKS pre-test was self-administered and took approximately 20 minutes to complete. Weeks 1-4 (Intervention): Participants were requested to install the Mondly app on their own smartphones and use it for a minimum of 15 minutes a day, 5 days a week, for 4 consecutive weeks.

They were asked to complete the assigned levels (1-4). Participants were reminded to sustain adherence by sending the log sheet weekly through email documenting the daily use duration. Week 4 (Post-test and Survey): Members convened again.

To begin, the same VKS was administered as a post-test. Upon completion, the post-intervention User Satisfaction Survey was distributed. The session lasted a total of roughly 30 minutes.

Data Analysis.

The information collected was processed using the Statistical Package for the Social Sciences (SPSS) software version 25. Vocabulary Knowledge Scores: Total pre-test and post-test scores on the VKS were compared descriptively to evaluate changes in vocabulary scores following the intervention.

Satisfaction Survey (Likert Scale): Descriptive statistics, i.e., means (M) and standard deviations (SD), of all 10 Likert-scale items were calculated to determine the central tendency and variability of participants' responses on satisfaction and perceived utility.

Results and Discussion

This section presents the results of the study on the use of the Mondly app for vocabulary acquisition among first-year EFL students. The findings are reported through pre-test and post-test descriptive statistics and reliability analyses of the instruments. Reliability analysis assessed internal consistency. The Vocabulary Knowledge Scale showed Cronbach's alpha coefficients of 0.913 for the 15 pre-test items (Table 1) and 0.842 for the 15 post-test items (Table 2). Both coefficients exceed the commonly used 0.70 benchmark and indicate acceptable-to-high internal consistency.

Table 1

Reliability statistics of the pre-test

Cronbach's Alpha	N of Items
,913	15

Table 2

Reliability statistics of the post-test

Cronbach's Alpha	N of Items
,842	15

Table 3

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Pre_Total	20	1,60	3,87	2,7367	,62182
Post_Total	20	3,67	4,80	4,3200	,36232

The pre-test scores (Pre_Total) indicate that the participants (N = 20) entered the intervention with varying levels of vocabulary knowledge, with scores ranging between 1.60 and 3.87 (Table 3). The mean score of 2.74 (SD = 0.62) indicates generally low prior knowledge of the target vocabulary items, with varia-

bility among participants at the outset. Following the intervention, post-test scores (Post_Total) showed higher values on the reported descriptive measures.

The score range shifted to 3.67-4.80 and the mean score rose to 4.32. The standard deviation declined to 0.36, representing approximately a 42 % reduction in variability compared with the pre-test. This pattern indicates higher post-test vocabulary scores and less dispersion across participants. To address the second research question, a preference questionnaire was administered at the conclusion of the intervention phase. Cronbach's alpha values of .908 and .916 are reported for the two 10-item reliability analyses shown in Tables 4 and 5.

Table 4

Reliability statistics of questionnaire scale 1

Cronbach's Alpha	N of Items
,908	10

Table 5

Reliability statistics of questionnaire scale 2

Cronbach's Alpha	N of Items
,916	10

The findings showed clear patterns in students' ratings. Table 6 reports aggregate mean scores for Mondly_Total and Traditional_Total; these values should be interpreted together with the item-level ratings reported below.

Table 6

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Mondly_Total	20	1,40	4,80	3,1500	1,21720
Traditional_Total	20	2,00	5,00	3,3700	1,16307

Table 6 shows an aggregate mean of 3.15 (SD = 1.22) for Mondly_Total and 3.37 (SD = 1.16) for Traditional_Total; therefore, the aggregate totals do not show a higher overall rating for Mondly. At the item level, Motivation was rated highly (M = 4.35, SD = 0.67). Enjoyment Level was also high (M = 4.25, SD = 0.72). Perceived Effectiveness (M = 4.10, SD = 0.79), Ease of Use (M = 4.15, SD = 0.81), and Overall Preference (M = 4.20, SD = 0.70) were all above the neutral midpoint, indicating positive attitudes toward the platform.

The relatively low standard deviations reported for the item-level measures, particularly Motivation (SD = 0.67) and Overall Preference (SD = 0.70), indicate relatively consistent responses on those items. These item-level ratings support positive attitudes toward Mondly, but Table 6 does not support the stronger claim that Mondly received a higher aggregate preference score than traditional approaches.

The study addressed two main issues: vocabulary-score changes during Mondly use and students' attitudes toward gamified practice relative to traditional vocabulary-learning practices. The results showed higher post-test VKS scores and generally positive item-level ratings of Mondly. The discussion below relates these findings to established theory and prior research.

The VKS mean increased descriptively from 2.74 before the intervention to 4.32 after the intervention. Because the study used a one-group pre-test-post-test design, this within-group change should not be interpreted as a controlled between-method effect. Psychological needs for competence, autonomy and relatedness are central to Self-Determination Theory [11; 72].

This motivational framework is consistent with Dehghanzadeh et al.'s systematic review [12; 941], which reports generally positive learning experiences and outcomes in gamified English-learning environments. Positive motivation ratings in the present study may be compatible with this broader pattern, although the one-group design does not establish that motivation caused the vocabulary-score change. N. Schmitt [2; 119] and I. S. P. Nation [4; 98] discuss the importance of sustained, repeated vocabulary learning.

One important consideration is the assessment design. The study used the same VKS before and after the intervention and did not include a control group. Accordingly, the observed increase should be interpreted as a within-group pre-test–post-test change rather than as a causal estimate of Mondly’s effect.

The VKS reliability coefficients were $\alpha = .913$ at pre-test and $\alpha = .842$ at post-test. The questionnaire reliability outputs were $\alpha = .908$ and $\alpha = .916$. Table 6 reports $SD = 1.22$ for Mondly_Total and $SD = 1.16$ for Traditional_Total, indicating substantial individual variation in the aggregate ratings.

Learner heterogeneity can be considered in light of Z. Dörnyei’s work on individual differences [5; 178]. Learning style, technology attitudes and personal motivation may influence students’ responses to digital vocabulary practice. Because this study did not assign separate Mondly and traditional-instruction conditions, it cannot determine which method is optimal for particular learner subgroups.

The gamified approach, on the other hand, effectively combines a number of I.S.P. Nation [4; 99] strands. It provides meaning-focused input as contextualized examples and language-focused learning through direct instruction and practice. Significantly, it strongly encourages fluency acquisition in terms of being required to identify and remember words rapidly under time constraints or as a component of game mechanics.

The descriptive VKS mean increased from 2.74 at pre-test to 4.32 at post-test. No inferential test establishing $p < .001$ is specified in the Data Analysis section, so the result is reported here as a descriptive within-group increase rather than a statistically significant effect. Dehghanzadeh et al.’s review [12; 941] provides broader evidence that gamified English-learning environments can be associated with positive learning experiences and outcomes.

The results can also be considered alongside platform-specific studies. The higher post-test VKS scores and positive item-level motivation and enjoyment ratings are broadly consistent with findings reported for other language-learning apps. Loewen et al. discuss learning outcomes among Duolingo users [18; 304]. Aco and Suwandi report links between gamified learning, motivation and vocabulary retention [15; 148].

Although this research centered on vocabulary acquisition within an app, it is important to place the findings within the larger framework of language skills. Loewen et al. [18; 305] discuss limitations of app-based learning for broader communicative development. The present study assessed vocabulary knowledge rather than spontaneous speech. Further research should therefore examine how vocabulary practiced in an application transfers to authentic communicative tasks.

The positive motivation and engagement ratings are also broadly consistent with Cancino and Castillo Fonseca’s work on gamified L2 vocabulary learning and engagement [6; 168]. This suggests that motivational benefits of gamification may occur across different learning contexts, although the mechanisms were not isolated in the present study.

Al Shihri et al. [20] found that integrating multiple MALL applications was associated with improved academic vocabulary acquisition and positive learner experiences. These findings provide a relevant comparison for the present students’ positive item-level ratings of mobile gamified practice.

There are several limitations to the study. The sample ($N = 20$) limits generalizability, and the absence of a control group prevents a controlled estimate of the intervention effect. The experiment also did not test long-term retention, an important issue in distributed-practice research [7; 372].

Follow-up research should:

1. Employ a greater sample size to capture maximum statistical power and generalizability;
2. Implement various assessment methods, including spontaneous production and writing tasks, to ascertain the transfer of vocabulary knowledge to communicative competence and to examine the constraints of app-based learning identified in previous work [18; 306];
3. Include a delayed post-test to determine whether the observed vocabulary gains persist over time;
4. Include qualitative assessment, such as interviews or open-ended responses, to better understand learner attitudes and individual differences underlying the observed performance patterns.

Lastly, the findings suggest that Mondly can be used as a supplementary vocabulary-learning tool in this specific context, but the one-group design does not establish that it is more effective than traditional instruction. Its strength may lie in combining repeated retrieval practice with motivational features. Gamified resources can therefore be integrated with classroom instruction rather than treated as a replacement. A combined approach can use teacher-led instruction to introduce and explain new vocabulary and game-based tools to provide additional repeated practice for recall and fluency.

Conclusions

This study investigated the use of the gamified platform Mondly for vocabulary learning among first-year EFL students. The mean VKS score increased from 2.74 to 4.32 over the study period, indicating a substantial within-group improvement in reported vocabulary knowledge. Because the study used a one-group pre-test–post-test design, this change should not be interpreted as a controlled causal estimate of Mondly’s effectiveness.

The observed pattern is consistent with theoretical accounts emphasizing repeated exposure, engagement and structured practice in vocabulary learning, but the present design cannot isolate which specific platform features produced the change.

This research contributes to work on gamified MALL apps as supplementary language-learning tools. For instructors, apps like Mondly can provide additional opportunities for learner engagement and independent practice. The lower post-test standard deviation may reflect convergence in scores, but it does not by itself establish that the platform caused a more homogeneous or confident class environment. Thoughtful integration of gamified learning into homework, classroom stations or enrichment practice may therefore complement traditional teaching.

However, this study also warrants a note of cautious optimism. While the results unambiguously speak to effectiveness in building explicit, testable vocabulary knowledge, they do not and cannot claim to have built complete, unscripted communicative competence. The ability to construct a sentence correctly in Mondly is an elementary skill, but it is quite a different matter from the fluency and strategic competence required to negotiate meaning in an impromptu conversation.

This same constraint, however, allows for the greatest implication on pedagogy: the need for a synergistic approach. The complete potential of gamified software like Mondly is realized not when isolated, but when combined with communicative language teaching. Imagine a classroom where Mondly is used to pre-teach and drill the vocabulary of an upcoming unit effectively. Then, in class, the teacher becomes less of a vocabulary deliverer and more of a communication facilitator, designing tasks, role-plays and discussions that push students to apply that pre-learned vocabulary to new situations in innovative ways. This model capitalizes on the strengths of both worlds: the app ensures students arrive with a sound foundation knowledge and the teacher guides them in applying that knowledge in useful ways.

With this in mind, several avenues for future research become clear. Longitudinal studies are needed to determine long-term retention of vocabulary learned through gamified apps. Most crucially, research needs to employ mixed-methods designs that combine quantitative measures like the VKS with qualitative investigations of learners' spontaneous language use in speaking and writing tasks. This will provide a fuller picture of the transfer of learning from the app to real-life language use. Finally, a more in-depth look at the comparative importance of specific gamification elements (i.e., leaderboards vs. badges) on motivation and results would help in the design of still more engaging digital learning experiences.

In final thought, this research shows that the digital revolution in language learning is not on the horizon; it's here, in the smartphones of our students. Gamified websites like Mondly are a significant resource in the battle to equip learners with the lexis they need. By integrating these tools in a judicious fashion into an equitable pedagogical environment that also honors productive practice and genuine communication, teachers can harness their power to create richer, more engaging and ultimately more effective language learning environments for the 21st-century learner.

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CRedit Author Statement

G.A. Rizakhoyayeva: Conceptualization, Methodology.

L.N. Abdullah: Software, Formal analysis.

Conflict of Interest Statement

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Student perception of epistemic submissiveness in translation: A case study of future translators in Kazakhstan

The study is devoted to the subject of the epistemic submissiveness of future translators in the process of working with Central Asian archaeological discourse including latent colonial markers. The work is based on the analysis of translation of archaeological binary oppositions in the incoming (English-Russian) and outgoing (Russian-English) vectors. A student translation corpus (STC) and the findings of a survey of 41 students of the Buketov Karaganda National Research University provide an empirical base. A mixed-method design and non-parametric statistical approaches (Fisher's exact test, Mann-Whitney, Spearman correlation) were used to compare the respondents' psychological attitudes with their real translation decisions. The results revealed a striking paradox: in the overwhelming majority of situations, even when students recognize the ideological slant of the original, they turn to semantic calquing. And this leads to the pragmatic reduction and voluntary self-exoticization of national cultural heritage for the Western reader in the outgoing vector. It is argued that to overcome the automatism of epistemic submissiveness, it is required to implement techniques of intentional deconstruction and to change students from passive transmitters of foreign hierarchies into active subjects of intercultural communication.

Keywords: translators, epistemic submissiveness, decolonial translation, archaeological discourse, binary oppositions, psychological attitudes, pragmatic adaptation, corpus-assisted discourse studies.

Introduction

In the context of globalization, translation is not a neutral linguistic operation, but a means of distribution of epistemic authority. In the decolonial turn, translation is regarded as a process of identity and social representation construction [1]. The problem is particularly apparent in relation to the archaeological heritage of Central Kazakhstan, which, in the Western popular scientific discourse, is typically presented as a system of hierarchical binary oppositions, such as “*center / periphery*” or “*civilization / barbarism*” [2]. Following J. Derrida, these oppositions are never neutral; they inherently establish the supremacy of one element over the other [3]. Within the framework of cultural semiotics, Russian scholarship carefully analyzes analogous mechanisms of centering and marginalization [4].

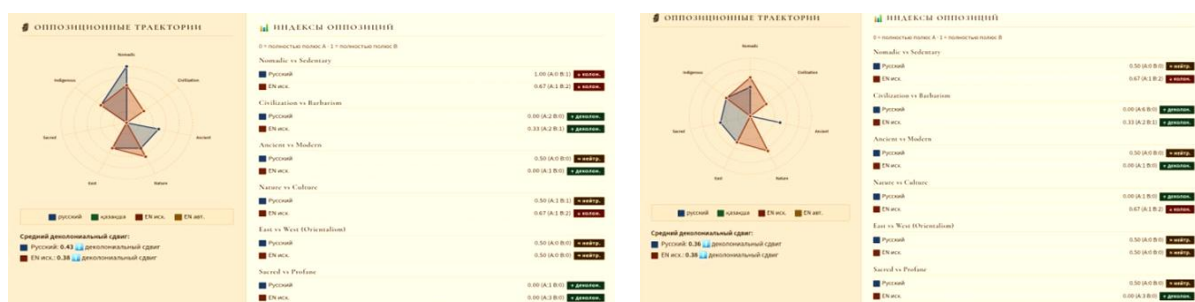
The theoretical foundation of this study rests on three main pillars. Firstly, decolonial translation criticism rests on the idea that the activity of translation has been a tool for colonial knowledge creation historically [5], [6]. Modern theorists believe that a decolonially oriented translator should actively undermine Orientalist frameworks rather than reproducing the hierarchies implicit in the source text [7]. The main difficulty is the phenomenon of the internalization of the subaltern status [8].

Secondly, corpus-assisted discourse studies (CADS) [9], [10] serve as a methodological tool for identifying ideologically relevant lexical choices in large text corpora. The quantitative frequency analysis combined with a qualitative interpretation avoids the problems of selective citation and at the same time maintains the depth of research that is necessary to detect the subtle ideological changes [9; 38].

Thirdly, the analytical unit employed is the concept of binary opposition itself. In the West, the depiction of Central Asian archeology is systematically activated by oppositional pairings [11], whose poles are

Methods and Materials

So that translation students could diagnose and correct dichotomies, we developed an original interactive web simulator “*Deconstruction Analyzer Steppe Code v.2.0.0*” [15] — a scenario simulator that allows the student to choose among three indexed solutions: index 0 denotes epistemic submissiveness and is displayed in red, whereas index 2 denotes the pragmatic restoration of subjectivity and is displayed in green. These indices correspond to specific translation strategies (calquing — index 0; pragmatic adaptation — index 1; and full restoration of subjectivity — index 2) (Fig. 1).



All statistical calculations were performed in Python 3.12 using the SciPy 1.12 library [16]. Ordinal distributions of the corpus index were compared using the one-tailed Mann-Whitney U test with the effect size calculated as $r = U / (n_1 \times n_2)$. To evaluate the distribution shape against a uniform distribution, we used the chi-square goodness-of-fit test. Intra-vector thematic variability was assessed using the Kruskal-Wallis H test. Questionnaire data on Likert scales are presented as mean (M), median (Me), and standard deviation (SD). Fisher's exact test was applied to 2×2 contingency tables; Spearman's rank correlation coefficient (r_s) was calculated for ordinal associations. The statistical significance level was set at $\alpha = 0.05$ (two-tailed, unless otherwise specified). Given the exploratory nature of the survey samples ($n = 19\text{--}22$), inferential statistics for the questionnaire data are reported alongside effect sizes and are interpreted as requiring replication in larger cohorts [17].

The analysis of the incoming vector (EN-RU, n = 22) revealed a gap between the perception of tone and the actions of translators. While 68 % of translation students did not perceive the tone of the source text as

arrogant, 72.7 % agreed with the statement that they are obliged to maintain the author's tone even if it contains stereotypes. Fisher's exact test ($p = 0.312$) showed that the choice of calquing strategy does not depend on the recognition of arrogance, supporting the hypothesis of automatic epistemic submissiveness. Spearman's correlation established a strong relationship between loyalty to the author and the choice of calquing strategy ($r_s = 0.611$, $p = 0.002$).

This automatic disposition is vividly reflected in the students' self-reported rationales. When asked to justify their translation of the controversial phrase "*free meal*," 63.6 % of students prioritized authorial fidelity over cultural defense, "*Translated literally to accurately convey the style of the Western author*" / «Перевел(а) буквально, чтобы точно передать стиль западного автора». Only a marginal 4.5 % actively resisted the framing, asserting, "*I selected an emphatically respectful word, as the original sounds incorrect for our history*" / «Я подобрал(а) подчеркнуто уважительное слово, так как оригинал звучит некорректно для нашей истории». Figure 2 illustrates the stark disproportion in student translation strategies regarding this ideological marker.

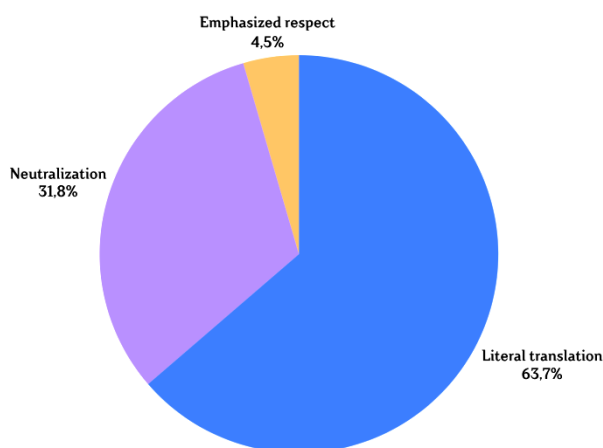


Figure 2. Student strategies for translating the ideological marker "*free meal*" (EN-RU vector)

In the outward group (RU-EN, $n = 19$), 76 % of students rated the original as "*elevated*" while 35.3 % admitted to intentionally simplifying the text for the Western reader. The Fisher's exact test confirmed ($p = 0.014$) that students striving to sound objective to the West resorted to pragmatic reduction and self-exoticism significantly more often. As shown in Figure 3, over a third of the respondents actively engaged in tone flattening.

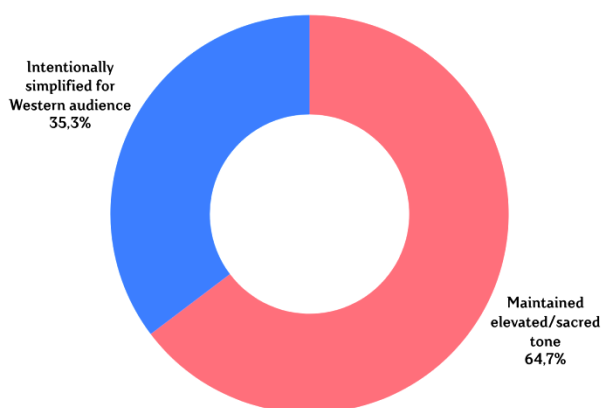


Figure 3. Student rationale for modifying the tone of specific cultural terms (RU-EN vector)

This tendency to artificially flatten their own cultural narrative is highlighted by their questionnaire responses, where 35.3 % openly justified their choice, "*Yes, I simplified the text because our complex metaphors would be incomprehensible to foreigners*" / «Да, я упростил(а) текст, так как иностранцам будут непонятны наши сложные метафоры». This tendency to artificially flatten their own cultural narrative resonates with G. Spivak's concept of the internalization of the subaltern status [8]. The students un-

consciously adopt a peripheral position, assuming their culture must be simplified to be accepted by the “center.” This paradox of epistemic submissiveness stems from lingering dominance of the “*fidelity to the original*” paradigm. While modern theorists like K. Batchelor urge translators to actively undermine orientalist frameworks [7], our empirical data demonstrates that translation students often lack the cognitive tools to resist these established hierarchies, prioritizing fidelity over epistemic justice. A consolidated summary of the inferential statistical analysis regarding the students’ perceptual dispositions and their translation choices is presented in Table 1.

Table 1

Summary of inferential statistical analysis for post-translation questionnaires

Translation Vector	Variables Tested	Statistical Test	Test Statistic	p-Value	Interpretation
EN→RU (n = 22)	Arrogant tone recognition × Calquing strategy choice	Fisher’s exact test	-	0.312	Not significant. Supports the hypothesis of automatic epistemic submissiveness
EN→RU (n = 22)	Fidelity to the original × Calquing strategy choice	Spearman’s rank correlation	$r_s = 0.611$	0.002	Significant strong positive correlation
RU→EN (n = 19)	Intention to sound objective to Western readers × Frequency of pragmatic reduction	Fisher’s exact test	-	0.014	Significant. Confirms intentional flattening of the cultural narrative

The analysis of the student translation corpus revealed three main conflict zones. The first zone is associated with the opposition “*civilization / barbarism*.” In texts about Bronze Age ceramics, the English source text uses the marker “*barbarians*.” It is noteworthy that 100 % of the students translated it as «варвары» (index 0), thereby uncritically accepting the imposed marginalization of their region. The second zone reflects the opposition “*sacred / profane*.” More than half of students (63.6 %) calqued the metaphor “*free meal*” in relation to the domestication of the Botai horse as «бесплатный обед», thereby desacralizing the historical event. The third zone illustrates the opposition of “*subject / object*.” The marker “*so-called*” in the context of the Karazhertas pyramid introduces epistemic doubt into the discourse. When translating it word-for-word, students produced phrases like «так называемая монументальная гробница...» and «так называемые Казахстанские монументальные катакомбы...», thereby inadvertently delegitimizing the national monument. Similarly, the historical figure Timur, originally referred to as an “*infamous warlord*,” is reduced in student translations to “*bandit*” or “*military leader*” who steals sheep.

In the outgoing vector (RU-EN), the calquing strategy of specific cultural terms also demonstrates pragmatic reduction. For instance, the established archaeological term «курган с усами» was frequently translated through awkward literalisms like “*kurgan with whiskers*” or “*kurgan with mustaches*,” severely undermining the scientific validity of the local terminology in English. Table 2 provides a consolidated overview of characteristic translation decisions demonstrating varying degrees of pragmatic adequacy across both translation vectors.

Table 2

Characteristic examples of pragmatic adequacy indices in student translations

Translation Vector	Ideological Marker (ST)	Student Translation (TT)	Pragmatic Adequacy (Index)	Strategy
EN→RU	“barbarians”	«варвары»	Index 0	Epistemic submissiveness (calque)
EN→RU	“free meal”	«бесплатный обед»	Index 0	Epistemic submissiveness (calque)
EN→RU	“tribal chieftain”	«представитель элиты / правитель»	Index 2	Restoration of subjectivity
RU→EN	«курган с усами»	“kurgan with whiskers / mustached kurgan”	Index 0	Pragmatic reduction
RU→EN	«курган с усами»	“stone ridges extending from it”	Index 1	Pragmatic adaptation
EN→RU	“so-called”	«так называемая...»	Index 0	Internalization of epistemic doubt

It is precisely in this context that the application of the web simulator “*Deconstruction Analyzer Steppe Code v. 2.0.0*” [15] demonstrates its didactic effectiveness. The comparison of scenarios working on the same fragment of the transcript allows the student to instantly realize the pragmatic consequences of linguistic choices. The red indication of index 0 acts as a cognitive disruptor, prompting the student to shift from semantics to decolonial reflection. The mechanics of working with the simulator showed that visualization provides a powerful stimulus. Upon seeing the red marker for the term “*tribal chieftain*,” the student transitions to index 2 (“*elite representative*”), which restores the social complexity of ancient society.

Conclusions

In conclusion, the study shows that typical translation education renders students very vulnerable to epistemic pressure in a situation of knowledge asymmetry. Our empirical data show that even if future translators manage to identify ideological bias or arrogance in the source text, in the overwhelming majority of cases, they resort to epistemic submissiveness via semantic calquing. This involuntary action is an effect of a deeply entrenched commitment to the “*fidelity to the original*” paradigm. Thus, the incoming translation vector (EN-RU) enables students to unintentionally accept their own marginalization and to transfer hierarchical signals uncritically. In the outgoing vector (RU-EN), however, this same paradigm leads to pragmatic reduction and intentional self-exoticization, as students flatten and simplify elevated national narratives artificially to suit the expected Western standards.

To disrupt this automatism, it is vital to introduce specific instruments of digital humanities into translation pedagogy. The web simulator “*Deconstruction Analyzer Steppe Code v.2.0.0*” is shown to be effective in interrupting the reflex of literal translation with visual cognitive triggers, such as color signaling of pragmatic adequacy indices. The simulator objectifies visually ideological traps, allowing students to go from passive semantic transfer to active decolonial reflection, which allows them to recover the social and cultural complexity of their history in the language of translation.

The results finally reveal that decolonial translation competence cannot be acquired through academic sessions only. The future translators should be trained to recognize that they are not the passive transmitters of the hierarchies of others, but the active subjects of the international conversation who think critically. And while the exploratory nature of this study calls for additional replication on larger samples, it makes a persuasive case for the need to restructure translation education towards pragmatic awareness, active subjectivity and epistemic fairness.

CRedit Author Statement

G.R. Abdullina: Conceptualization, methodology (theoretical framework), validation, supervision, writing — review & editing.

A.N. Kalizhanova: Conceptualization, data curation, formal analysis, investigation, software, writing — original draft preparation.

Conflict of Interest Statement

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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