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Scientific and methodological foundations of open educational platform employment in language teaching

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ABSTRACT

The objective of the research is to investigate the efficacy of these platforms in facilitating language acquisition, fostering student engagement, and personalizing learning experiences. A survey was conducted among 100 language teachers from higher educational institutions in Astana, Kazakhstan. The teachers were requested to evaluate the efficacy of open platforms in language instruction, taking into account factors such as student motivation, the individualization of learning, and the availability of resources. The research employed a descriptive design, utilizing a three-level response scale to collect data on the integration of the aforementioned platforms and the preparedness of educators to utilize them. The findings suggest that open platforms facilitate access to resources and enhance student motivation when integrated with interactive tools, such as GraphoLearn and Kahoot!. However, the study emphasizes the necessity for structured training to address the challenges encountered by educators in implementing these platforms effectively.

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1. INTRODUCTION

Understanding open educational platforms in language instruction is crucial. Learning is more flexible and accessible on such platforms since learners can access resources anytime and anywhere. They can also be used to tailor learning to each student's needs and training, improving learning. Studying scientific and methodological foundations allows for the creation and use of new teaching methods on modern platforms. Language teaching considers learners' language level, preferences, learning objectives, resources, and technical skills. Since scientific and methodological foundations demand investigation and examination of various variables, the inquiry is about them.

Syafryadin *et al.* [1] discussed the use of computers in English language teaching, noting that listening is the most difficult skill for learners, while reading is considered easier. Hidayat *et al.* [2] addressed the link between online activity and positive online English learning experiences. Toh and Lim [3] emphasized that young people demonstrate critical thinking and multimodal literacy in gaming, suggesting that video games can be an effective learning tool. Zulaiha and Triana [4] emphasized that students learning English as a foreign language can take advantage of open educational platforms to develop their writing

skills. Arvanitis [5] noted that online environments and mobile applications provide foreign language learners with a wide range of texts and materials for self-study, as well as allowing them to use authentic language.

Furthermore, Muslem *et al.* [6] noted that the use of YouTube learning materials supported by peer-to-peer participation led to a marked improvement in the learning of English language teaching methods among students compared to those who did not receive peer support. Hamadi *et al.* [7] highlighted the potential of social media as a formal educational tool in university education, including in the context of language learning. A study conducted by Ahmed [8] emphasized the importance of using specially designed language applications that are adapted to the needs and interests of modern students, providing an opportunity for effective and accelerated language learning, considering current technological trends and learners' preferences. Agustina *et al.* [9] noted that the use of mobile educational applications contributes to the development of critical thinking in students, simplifying the pedagogical process. Imamyartha *et al.* [10] highlighted the greater potential of the Moodle platform in creating deep knowledge among students, combining this process with training their language skills, compared to Telegram. However, to fully understand the effectiveness and applicability of these applications in the context of language teaching, more research is needed to assess their impact on various aspects of learning, including student motivation, quality of the educational process and the effectiveness of the knowledge achieved.

2. METHOD

The study examined how open educational platforms make language learning more flexible and accessible by offering a wide selection of online courses, interactive lessons, and learning resources. Mobile learning and digital games diversify and engage pupils, promoting motivation and learning. The study also analyzed innovative language teaching methods like GraphoLearn, Kahoot!, and Rosetta Stone, which combine modern technologies and pedagogical methodologies to improve learning.

During this research, a survey of language teachers of higher educational institutions in Astana, the Republic of Kazakhstan, was conducted. The survey was conducted from 06.05.24 to 13.05.24. The participants were selected based on specific inclusion and exclusion criteria to ensure that the data collected represented educators with experience in using open educational platforms. The study included teachers who were actively teaching language courses in higher education, with at least three years of teaching experience and those who had previously used open educational platforms or mobile applications in their teaching practices. Teachers who had no prior experience with open educational platforms and those not involved in relevant types of teaching were excluded from the study. The total sample of the survey was 100 respondents aged 27 to 57, including both women (aged 29 to 55) and men (aged 27 to 59). The survey evaluated respondents' perceptions of open educational platforms' language learning effectiveness using a three-level answer scale (low, medium, high). The survey included many open educational platform topics. Open educational platforms were evaluated by teachers in many language teaching areas. The experiment seeks to determine how well open educational platforms are integrated into the educational process, their ability to adapt to student needs, and the availability of resources and support for their use in education. The questions to language teachers included the following aspects:

i) How often do you use the core curriculum (CC) in your language teaching practice?
ii) How do you assess the level of effectiveness of using open educational platforms in your language teaching?
iii) How would you assess your level of training and readiness to use CC in language teaching?
iv) In your opinion, does the use of open educational platforms help to increase students' motivation to learn a language?
v) Do you feel that CC allow you to individualize language learning for different types of learners?
vi) What is your assessment of open educational platforms in terms of content quality and accessibility of language learning materials?

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3. RESULTS

One of the main advantages of e-learning is its accessibility and flexibility. Students can access educational materials and resources at any time and place convenient for them, using computers, tablets,

smartphones, and other devices. This is especially important for those who are busy with work or other responsibilities and have limited time to study. E-learning technology also contributes to improving the quality of learning by individualizing the learning process. Personalized courses and materials allow teachers to tailor learning to the individual needs and skill level of each student, which helps to increase engagement, understanding and retention. Another important aspect is the ability to use interactive and multimedia materials that make the learning process more engaging and effective. Visualization, animation, audio, and video materials demonstrate complex concepts and create interactive exercises and simulations, which helps to improve the memorization and understanding of the training material. Thus, e-learning technology is not only an effective tool for modern education but also a key factor in improving the accessibility, quality, and effectiveness of the learning process [11].

Open educational platforms in language learning allow virtual access to language learning materials, resources, and technologies. These platforms allow users to use materials without payment or geographical constraints because they promote open access and knowledge dissemination. Open educational platforms for language learning aim to make reading, writing, speaking, and listening easy and effective. Many educational platforms offer textbooks, audio and video resources, exercises, tests, and interactive apps. The advantages of open educational platforms in language learning include many aspects, as shown in Figure 1.

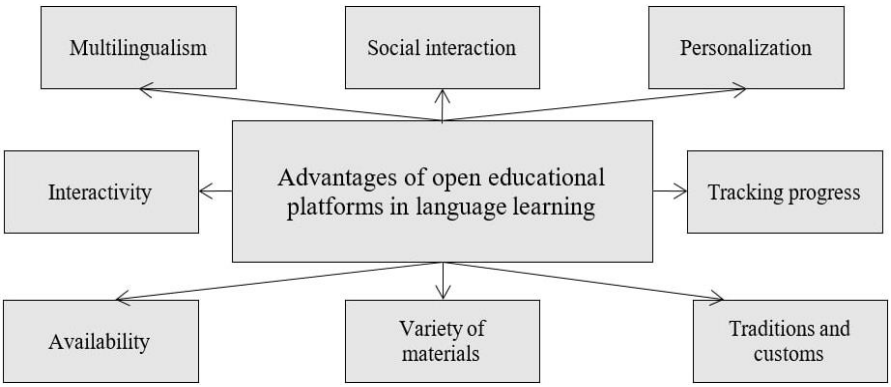

Figure 1. Advantages of open educational platforms in language learning

The availability of learning through open education platforms is also expanding to different locations [12]. Users can obtain training materials on their PCs, laptops, tablets, or cell phones. This lets students learn on public transportation or during work breaks. Educational institutions are no longer inaccessible because training is available anywhere with an internet connection. Many systems customize courses and materials for each user's expertise and aspirations. Users can learn at their own pace and focus on their favorite or most useful topics. Additionally, several platforms use machine learning algorithms to customize materials and assignments for each user, improving learning. Open educational platforms include video lectures, interactive assignments, study aids, and assessments. Many platforms allow users and teachers to communicate, which helps share knowledge and build a learning community.

Interactive exercises, examinations, and assignments on numerous learning platforms help language acquisition. These tools help students consolidate knowledge and enhance language skills. They have grammar, vocabulary, listening, reading, writing, and speaking tasks. Interactive exercises let students practice language skills in a controlled environment. Gap-fill exercises, choosing the right answer, translating texts, writing sentences or conversations, and listening and pronunciation assignments are examples. These exercises let students practice the language in real-time. Language proficiency is assessed and development is tracked by tests. Multiple-choice, matching, error correction, and written and oral assignments are common. Adaptive examinations on several platforms automatically match students' knowledge and difficulty. Instant feedback is a major benefit of interactive exercises and examinations. Students can quickly view their mistakes and right answers after finishing an assignment or test. This helps people identify mistakes, correct them, and develop their skills.

Personalized learning is one of the key principles of modern education and plays an important role in effective language learning on online platforms [13]. One technique to personalize learning is to tailor materials and exercises to each student's knowledge and language aspirations. Some platforms start courses with diagnostic exams or questionnaires to assess learners' abilities and needs. The system automatically chooses materials and exercises for each learner based on these exams, allowing them to use their time productively and focus on their preferred language topics. Some platforms offer a variety of subject modules

or courses that let learners choose topics that interest them and are relevant to their professional or personal aspirations. This may include individual discussions with teachers or tutors, comments on assignments and tests, and suggestions for further study and independent work. This personalized guidance helps students overcome challenges and reach linguistic goals.

Multilingualism in open educational platforms is crucial for increasing educational resource accessibility across different countries and cultures [14]. By offering content in multiple languages, these platforms enable learners to study in their native or more comfortable language, particularly important in developing countries where English proficiency varies. This approach supports cultural exchange and understanding, allowing students to learn about diverse cultural traditions and customs. Multilingual resources foster tolerance and help students develop language competencies in multiple languages, enhancing their intercultural communication skills [15]. Moreover, providing educational materials in various languages promotes an inclusive learning environment, ensuring equal educational opportunities regardless of linguistic background. In our increasingly globalized world, such multilingual approaches are essential for breaking down language barriers and facilitating international educational experiences [16].

Social interaction on open educational platforms enriches learning by creating collaborative spaces where students can share knowledge, exchange ideas, and provide mutual support. Through forums, chats, and groups, learners develop critical communication skills by expressing thoughts, arguing perspectives, and respecting diverse opinions [17]. These interactions not only enhance understanding of educational material but also motivate students and prepare them for professional environments where communication is essential. Moreover, such platforms enable students to build valuable professional networks, connecting with teachers, peers, and other participants who may support future career development and opportunities for collaboration. Progress tracking is crucial in open educational platforms, enabling students and teachers to assess learning effectiveness and individual progress. By providing monitoring tools, platforms help students systematically evaluate their knowledge, identifying strengths and weaknesses to manage learning more consciously. For educators, tracking offers insights into student performance, allowing them to adapt teaching methods, adjust curricula, and provide personalized support. The process enhances student motivation by demonstrating progress and offering regular feedback. When students recognize their growth and receive constructive evaluations, they feel more confident and are encouraged to continuously improve their skills [18]. Despite their many advantages, open educational platforms also have several disadvantages that can make language learning difficult, as presented in Table 1.

Table 1. Disadvantages of CC in language teaching

Aspect	Description
Frequent lack of individual approach	Many platforms offer standardized courses that do not always meet the individual needs and level of knowledge of each learner. This can lead to some students feeling either undervalued or insufficiently supported in their studies.
Limited direct contact with teachers	Open educational platforms cannot often communicate with teachers in person, which can make it difficult to get feedback and additional help in case of difficulties or questions about the material.
Limited learning context	Virtual learning environments do not always provide sufficient immersion in the language environment and culture, which can limit students' opportunities to practice the language in real-life situations.
Insufficient attention to the development of communication skills	Many platforms focus on developing grammar and writing skills but pay less attention to developing speaking and the ability to communicate in the language in real-life situations.
Insufficient attention to cultural aspects	Open educational platforms often lack proper attention to the cultural aspects of language, which can lead to an incomplete understanding and appreciation of the language environment and intercultural differences.
Limited opportunities for practice	Some platforms provide limited opportunities to practice the language in real-life situations, which can make it difficult to learn and retain the material.

Bilimdiler is a comprehensive Kazakh online educational platform offering diverse courses across multiple subjects for students and teachers. It provides self-study materials like textbooks, video tutorials, and interactive tests at various difficulty levels. The platform supports distance learning, enables teachers to create and share personal courses, and facilitates professional collaboration. Particularly valuable during challenging educational circumstances like the pandemic, Bilimdiler aims to make quality education more accessible throughout Kazakhstan.

Mobile learning offers a powerful and flexible approach to language acquisition [19]. Leveraging widely available mobile devices, learners can access educational resources anytime and anywhere, breaking free from traditional classroom constraints. Interactive apps featuring engaging exercises, games, and personalized lessons motivate students and allow them to progress at their own pace. These applications provide diverse learning materials like audio, video, dictionaries, and grammar guides, making language

learning convenient and adaptable for busy individuals. By combining accessibility, interactivity, and personalization, mobile learning represents an innovative and effective method of language education. Digital games have emerged as a powerful tool in language learning, effectively blending educational objectives with entertainment [20]. By creating an interactive and stimulating environment, these games enable learners to practice language skills in context-rich scenarios. They offer individualized exercises tailored to different proficiency levels, providing immediate feedback that helps students track their progress, and maintain motivation. The game-based approach goes beyond traditional language learning methods by developing critical skills such as problem-solving, communication, and collaborative thinking.

GraphoLearn is an innovative computer game designed to improve the reading skills of beginning readers by training grapheme-phoneme correspondences [21]. By focusing on phonological decoding and providing rapid word recognition, the software transforms reading education into an engaging, psychologically informed process. Its interactive tasks stimulate brain activity, helping children develop phonological awareness, and improve word reading speed and accuracy. GraphoLearn exemplifies how modern technology can create effective, interactive educational tools that support children's cognitive development and learning potential.

The Kahoot! educational platform is an innovative approach to learning based on the use of game elements [22]. Kahoot! revolutionizes classroom learning by transforming educational experiences through interactive digital quizzes and games. The platform significantly enhances student engagement by making learning dynamic and participatory. Students actively interact with educational content, developing critical thinking skills while enjoying a competitive and supportive environment. By providing immediate feedback and enabling peer competition, Kahoot! increases student motivation and participation. The platform fundamentally changes classroom dynamics, turning traditional learning into an engaging, interactive experience that promotes deeper understanding and enthusiasm for education.

Language education in the 21st century has shifted from focusing solely on language structures to understanding linguistic and cultural communication within a multinational context [23]. Software like Rosetta Stone has become a pivotal tool, offering interactive learning methods that can rival traditional classroom instruction. The program adapts to different learning styles and student needs, providing contextualized exercises that support fluent communication. However, digital language learning cannot completely replace classroom experiences [24]. Traditional teaching allows direct interaction with teachers and peers, enabling group discussions, collaborative projects, and real-life language practice. Teachers can also more quickly identify and address individual student challenges. Despite these limitations, software like Rosetta Stone remains a valuable self-study resource. When combined with traditional teaching methods, such technologies can create a more comprehensive and effective approach to language acquisition, addressing the dynamic requirements of modern education [25]. The study surveyed teachers about the effectiveness of CC in language teaching, as depicted in Figure 2.

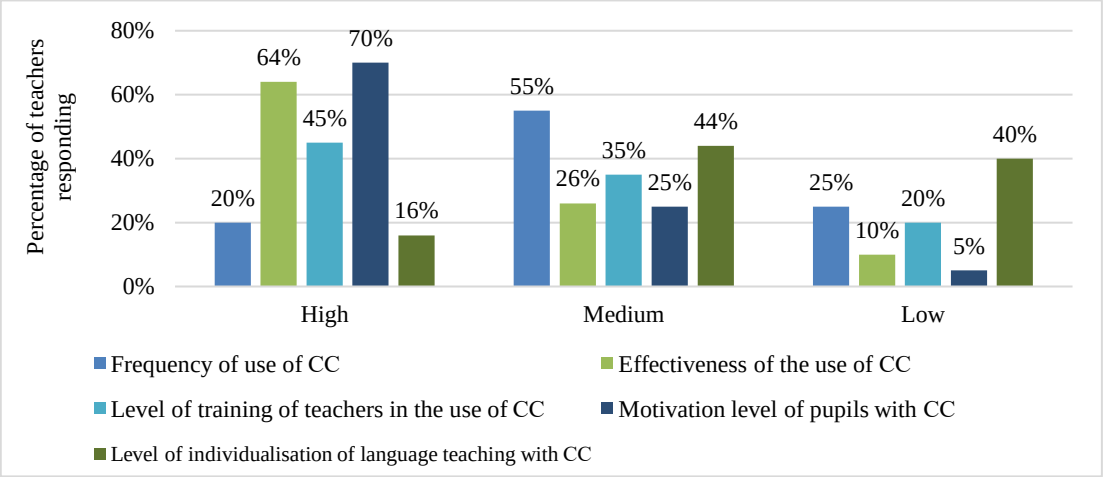

Figure 2. Results of a survey of teachers about the effectiveness of CC in language teaching

The survey reveals diverse perspectives on open educational platforms in language teaching. Teachers generally view these platforms positively, recognizing their utility while acknowledging challenges. Most educators appreciate the platforms' effectiveness, reporting significant improvements in student

learning outcomes. Teachers' proficiency with these platforms ranges from high to low, with many successfully integrating them into their teaching practice. Student motivation varies considerably, influenced by factors such as interactive learning materials and technical accessibility. Personalization of learning through these platforms differs among educators. Some teachers effectively utilize individualization opportunities, while others struggle due to limited training or time constraints. Teachers acknowledge the usefulness of CCs and see them as a significant contribution to improving student learning outcomes. However, many teachers prefer traditional teaching methods or face technical difficulties in implementing CC. Thus, to maximize the effectiveness of open educational platforms, it is necessary to provide teachers with the relevant knowledge and skills, as well as pay attention to student motivation and opportunities for individualized learning.

Systematic teacher training on open educational platforms should include platform basics, interactive lesson development, and online learning methods. Institutions should provide ongoing administrative and technical support through consultations and master classes. Implementing motivational programs with incentive schemes and recognition can encourage platform adoption. Platforms should enable learning individualization, allowing teachers to adapt materials to student needs. Continuous student feedback and learning outcome analysis will help refine teaching strategies and improve educational effectiveness [26].

4. DISCUSSION

A principal outcome of this study is that open educational platforms, especially those incorporating gamified elements, markedly enhance student motivation and engagement. The utilization of tools such as GraphoLearn, Kahoot!, and Rosetta Stone facilitates the creation of interactive learning environments that capture the attention of learners and encourage active participation in the learning process. This finding is consistent with the conclusion of Nichter study [27], which emphasizes the beneficial impact of mobile learning on online student engagement. Nichter [27] indicates that students who utilize mobile learning devices to access educational content are more likely to engage with the material, complete assignments, and retain information. This finding lends support to the proposition that technology-enhanced learning environments can enhance engagement by rendering the learning process more dynamic, interactive and student-centered. Moreover, Ai *et al.* [28] posit that the integration of video game elements into educational platforms facilitates the formation of student identities. The argument is made that game-based learning not only enhances cognitive engagement but also fosters social interaction and community-building, which are crucial for language learning. However, while these platforms are effective in improving engagement, a focus on motivation alone may not be sufficient for long-term language acquisition.

One of the primary concerns identified in the study is the dearth of attention devoted to the development of speaking and communication skills. As Peña-Acuña research [29] has demonstrated, a significant number of digital platforms concentrate on reading, writing and grammar, with a consequent neglect of the essential skills of speaking and listening, which are of paramount importance for the effective use of language in real-world situations. This dearth of focus on oral communication constrains students' capacity to engage in genuine conversations, which are indispensable for attaining fluency in a foreign language. Furthermore, while digital platforms can provide a plethora of materials and resources, they are unable to replicate the interpersonal dynamics and immersion of a traditional classroom setting, where real-time interaction and feedback are essential for developing speaking skills [30]. Despite the availability of automated assessments and quizzes on some platforms, the lack of real-time teacher-student interaction may impede learners' ability to correct mistakes and improve their language skills. As observed by Alreshidi and Lally [31], educators' attitudes towards technology have the potential to significantly impact the efficacy of its integration in language education. Teachers who lack confidence in using digital tools may be unable to fully utilize the potential of these platforms, thereby limiting the overall learning experience for their students.

As demonstrated by Kim *et al.* [32], educators who have received comprehensive training in the utilization of open educational resources (OER) tend to achieve superior learning outcomes, as they can adapt their pedagogical approaches to align with the specific needs of their students. This corroborates the findings of our study, which indicated that teachers who were more proficient in utilizing digital platforms reported higher levels of student engagement and improved learning outcomes. The findings of Chen *et al.* [33] underscore the necessity of furnishing educators with sufficient support to assist them in surmounting these obstacles. Furthermore, it is vital to guarantee that educators have access to continuous assistance from educational technology specialists and administrative personnel, who can facilitate problem-solving and offer guidance on optimal practices [34].

Csapó and Molnár [35] highlight the effectiveness of online diagnostic assessments in tailoring the learning experience to the individual student. By evaluating students' proficiency levels and learning styles, platforms can suggest resources and activities that are most pertinent to their needs, thereby facilitating more

efficient learning. Nevertheless, as Jordan [36] has observed, the mere availability of content in multiple languages does not necessarily ensure the development of intercultural communication skills among students. To achieve this, platforms must incorporate culturally relevant content and materials that are tailored to the specific needs and backgrounds of learners.

Deficiencies in internet access and a scarcity of devices can markedly impede students' capacity to derive benefit from digital learning platforms [37]. This is particularly the case in underserved regions, where students may lack the requisite resources to access the technology needed to engage with these platforms. To address these issues, governments and educational institutions must collaborate in investing in infrastructure and ensuring that all students have access to the tools they require to succeed [38].

5. CONCLUSION

The integration of e-learning and open educational platforms has been demonstrated to be a transformative approach in modern education, offering significant advantages in language teaching. The use of digital resources in conjunction with traditional methods is exemplified by platforms such as Bilimdiler in Kazakhstan, as well as widely-used tools such as GraphoLearn, Kahoot!, and Rosetta Stone. These platforms provide students with flexible access to learning resources, interactive exercises and personalized experiences that cater to individual learning needs. Such tools not only engage learners but also facilitate continuous, self-directed learning, which is essential for the development of language proficiency. It is, however, essential to acknowledge that these platforms are most efficacious when employed in conjunction with in-person learning, whereby students can engage in active interaction with teachers and peers, discuss topics in real-time, and practice the language in practical, social contexts.

This study underscores the considerable potential of open educational platforms to enhance language learning outcomes, expand educational access, and address the diverse needs of learners, particularly in regions with limited educational resources. However, the findings also indicate several challenges that educators and institutions must address to fully utilize these platforms. These challenges include the necessity for consistent teacher training, technical support and infrastructural upgrades, which are pivotal in overcoming technical difficulties and encouraging effective platform integration. To optimize the advantages that can be gained, educational institutions would be well advised to invest in systematic professional development programmed designed to prepare educators for digital instruction, offer incentives to encourage platform use and ensure that technical support is readily available. Further research should investigate the development of adaptive learning algorithms that respond to individual progress, and examine the socio-cultural impacts of open platforms to enhance the tailoring of content for diverse learner groups. By addressing these areas, educational systems can create digital learning environments that are more inclusive, engaging, and effective, thereby catering to the evolving needs of students worldwide.

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C : **C**onceptualization
M : **M**ethodology
So : **So**ftware
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R : **R**esources
D : **D**ata Curation
O : Writing - **O**riginal Draft
E : Writing - Review & **E**diting
Vi : **Vi**sualization
Su : **Su**pervision
P : **P**roject administration
Fu : **Fu**nding acquisition

CONFLICT OF INTEREST STATEMENT

Authors state no conflict of interest.

INFORMED CONSENT

We have obtained informed consent from all individuals included in this study.

ETHICAL APPROVAL

The research related to human use has been complied with all the relevant national regulations and institutional policies in accordance with the tenets of the Helsinki Declaration and has been approved by the authors' institutional review board or equivalent committee.

DATA AVAILABILITY

The data that support the findings of this study are available from the corresponding author [RA], upon reasonable request.

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