

IMPROVING THE QUALITY OF LEARNING FOREIGN LANGUAGES THROUGH THE USE OF MOBILE APPLICATIONS

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ABSTRACT

Aim. The aim of the research is to analyse the effectiveness of specialized mobile applications in foreign language learning. **Methods.** The research employed the method of monitoring higher school students' academic performance, the Vocabulary Test, the Vocabulary Confidence Scale, and the method of expert evaluations. Statistical processing of the obtained data was carried out using Student's t-test, and correlation analysis. The reliability of the methods was tested by using the Cronbach's alpha. **Results.** The experimental group (EG) participants had higher mean scores for all research methods than the control group (CG) participants. The difference between the two groups was statistically significant for language competence ($t = -2.78, p < 0.01$), cultural sensitivity ($t = -3.12, p < 0.01$), adaptability ($t = -2.45, p < 0.05$), and communication effectiveness ($t = -2.08, p < 0.05$). The mean VCS score for the EG (81.3) was higher than for the CG (75.2). The difference between the two groups was statistically significant ($t = -2.34, p < 0.05$). **Conclusions.** The obtained results testify to the positive role of the use of mobile applications in improving the quality of foreign language learning. **Prospects.** Further research can be focused on studying the impact of different types of mobile applications on foreign language learning in order to determine the most effective methods.

Keywords: *Educational Environment, Foreign Language Competencies, Virtualization, Digitalization of Education, Specialized Mobile Application*

1. INTRODUCTION

Relevance. The demand for the creation of high-quality and effective specialized educational mobile applications is growing in view of the growing popularity of the use of information technologies in

almost all areas of human life. This process also affected education in general, and the study of foreign languages in particular. One of the main advantages of using mobile applications is intuitive navigation on the Internet resource, ease and clarity of presentation and assimilation of information,

quick access to necessary materials [1]. The relevance of the issue under research is related to the significant spread of information resources for learning a foreign language and the need to introduce Internet technologies into the educational process in higher education institutions (HEIs) [2].

Currently, there is a large number of software for learning foreign languages on the market of mobile

applications. The choice of a particular application depends on the learning goals, students' personal style, additional budget, chosen language to study, etc. [3]. Table 1 presents a brief overview of popular applications for learning a foreign language.

Table 1: Overview of popular mobile applications for a foreign language learning

Name	Web address	Description
Duolingo	https://www.duolingo.com/	Free application with game lessons for learning vocabulary, grammar, and developing speaking skills.
Memrise	https://www.memrise.com/	The application uses flashcards and games for memorizing words and phrases.
Rosetta Stone	https://www.rosettastone.com/	A popular application that uses an immersive learning method for learning a language naturally.
HelloTalk	https://www.hellotalk.com/?lang=en	The application is used for communication with native speakers of the language the student is learning via chat, calls, or video chat.
Busuu	https://www.busuu.com/	Offers the study of 12 of the world's most common languages with an emphasis on conversational skills.
LingoDeer	https://blog.lingodeer.com/author/lingodeer/	This application focuses on learning grammar and vocabulary through interactive lessons.
Mondly	https://www.mondly.com/	The application offers courses for learning 40 languages using a variety of learning methods.
Drops	https://languagedrops.com/	Learn the language with short, game-based lessons that focus on vocabulary and basic grammar.
Beelinguapp	https://beelinguapp.com/	This application allows you to read texts in your native and target language at the same time.

Source: created by the authors of the research based on [4]

The use of such applications contributes to the development of speaking skills and professionally relevant competencies [5]. A large number of authentic constantly updated materials immerse students to in a virtual language environment: they enable reading, watching, and hearing samples of modern foreign language speech and use them in their own speech. A variety of authentic text types, such as news stories, newspaper and magazine articles, blogs, reviews, etc., will allow students to choose the most interesting and relevant materials and will also introduce students to different forms of foreign language computer-mediated communication [6].

The issue of increasing the effectiveness of foreign language learning is becoming increasingly relevant in the view of the rapid development of digital technologies and the growing need to learn foreign languages [7]. Traditional teaching

methods, such as textbooks, lectures, and classic exercises, have their advantages, but often do not provide enough interactivity and flexibility that the students need today [8]. In this context, there is a need to implement the latest technologies, in particular websites and mobile applications, which can significantly improve the learning process [9].

The focus of this research is to study the possibilities of using websites and mobile applications in learning foreign languages, in particular, in improving the quality and efficiency of the educational process. The study focuses on several key aspects. First of all, it examines how mobile applications and websites contribute to increasing student engagement in the learning process through interactive tasks, game-based elements, and the opportunity to study at a convenient time. It is important to understand how the use of mobile applications affects the

development of students' lexical and grammatical skills compared to traditional learning methods. The article analyses the effectiveness of mobile applications in improving listening and speaking skills. Special attention is paid to the use of audio and video materials, as well as speech recognition functions. The influence of mobile applications on the students' motivation to learn foreign languages is studied, taking into account the factors of gamification and personalization of learning. The opportunities that mobile applications offer in providing learning flexibility, including the possibility of learning anytime and anywhere, as well as adaptation to the individual students' needs and levels are also considered.

Aim. The aim of the research is to determine the effectiveness of using mobile applications during foreign language learning.

Objectives/questions

1. Study the dynamics of academic performance of foreign language students;
2. Study the formation of vocabulary skills of the respondents;
3. Analyse psychological features of using new vocabulary;
4. Assess the level of foreign language communicative competence of students of both groups;
5. Carry out a correlational analysis between academic performance and the level of foreign language communicative competence.

2. LITERATURE REVIEW

A review of earlier studies is an essential component of any research, as it allows us to assess the current state of knowledge on the issue, identify unresolved aspects, and identify gaps in academic knowledge. This analysis helps identify relevant issues for further research and selection of methods and strategies and ensures proper validity and reliability of the obtained results. It also allows for avoiding duplication of work and promotes academic discussion and development of the educational community.

The researcher [10] studies the importance of using innovative methods, techniques, interactive activities and games in foreign language teaching. The author notes that learning a foreign language is difficult for students and teachers without these approaches. Using games during lessons enhances students' interest and attention to language learning. The article discusses several games designed to teach foreign languages to students of different ages and with varying levels of knowledge.

The authors [11] examine the teaching of foreign languages, considering the requirements of the federal-state educational standard of primary general education and European standards in this field. The author emphasizes the importance of students' effective use of the English language, the development of learning motivation, the formation of the personal meaning of study, and the creation of conditions for students to learn English with pleasure. The article also discusses the development of communication skills in the main types of speech activity: listening, speaking, reading, and writing. Emphasis is placed on developing the ability to communicate in English at an elementary level, considering the speech capabilities and needs of younger students in oral and written forms.

The researchers [12] examine the use of reinforcement learning (RL) algorithms to solve various natural language processing (NLP) problems, with a particular focus on conversational systems. The authors analyse the current state of RL methods in the field, discussing their applications and advantages for solving specific NLP problems. Limitations of these methods are also considered. The paper provides detailed descriptions of the issues RL can be effective and discusses why RL is suitable for solving them. At the end of the article, promising research areas in NLP that can benefit from using RL are outlined.

The authors [13] review the possibilities of using the generative chatbot ChatGPT in language teaching and learning. The authors analyse the potential of ChatGPT for supporting language learning, considering its advantages and disadvantages. In addition, it discusses the digital competencies teachers and students must have to use this tool ethically and effectively.

The researcher [14] examines the factors affecting successful foreign language learning. The author analyses the interrelationship of these factors and their influence on the language learning process. Special attention is paid to methodical and psychological aspects essential in foreign language learning.

The authors [15] present a new approach to learning foreign languages through the prism of intercultural pragmatics. The authors apply contrastive linguistic research using a variety of methodologies, such as surveys, interviews, and discourse completion tests. The proposed model, which is focused on speech acts, identifies the difficulties foreign language learners face through pragmatic evidence. An essential advantage of this approach is the avoidance of ideological premises and generalizations.

A study [16] examines the impact of virtual reality (VR) on foreign language learning and compares engagement, excitement and immersion between VR and mobile applications. The study involved 40 students: 20 used a VR display, and 20 used a mobile application to learn Italian. The data were collected using vocabulary tests and a Likert scale questionnaire. The results show that VR applications are practical and engaging for language learning, although not superior to mobile applications.

The researchers [17] reviewed the effectiveness of commercially available language-learning apps. Eight studies remained after the selection, evaluated according to applications, year of publication, language of study, age group of participants, study duration, and devices used. The review showed the lack of studies on the effectiveness of the applications; English was most often taught, and the most attention was paid to vocabulary testing. According to the researchers, commercial applications have proven effective in supporting language learning, but methodological differences between studies have made direct comparisons difficult.

The authors [18] reviewed the effects of mobile sensory applications on language learning by children aged 3 to 11 years. The analysis includes experimental studies from 2010, from which 11 were selected. Four features of mobile applications are considered: embedded narration, prompts for honest conversations, augmented reality (AR), and interactive points. Scientists did not find evidence of the influence of interactive points corresponding to the text. The authors discuss the limitations of existing research and emphasize the need for further studies grounded in learning theory and qualitative research.

The researchers [19] study the effectiveness of mobile applications in learning English. Motivation, learning strategies, learning outcomes and their relationship were studied in two experiments. The results showed that motivation, learning strategies and learning outcomes were significantly better in mobile English language learning than in traditional learning. Besides, they were positively correlated with each other. Although further study of the mechanisms is required, the results suggest the need for interdisciplinary collaboration in further research.

So, the influence of students' characteristics on the effectiveness of using mobile applications for learning foreign languages is a poorly studied issue. Finding optimal methods and learning strategies to provide the best results through mobile applications

in foreign language learning is also necessary. Efforts should be made to determine the effect of motivation and self-regulation on the success of foreign language learning through mobile applications.

This research is required because, despite the growing popularity of mobile applications in language learning, there is a lack of comprehensive studies addressing how individual learner differences, such as motivation, self-regulation, and cognitive styles, impact the effectiveness of these tools. Understanding these factors is crucial for designing personalized and adaptive learning solutions that maximize educational outcomes. The significance of this research lies in its potential to bridge the gap between technology and pedagogy, offering evidence-based strategies to enhance the quality of foreign language learning. This study contributes to developing more effective and inclusive language learning practices in the digital age by addressing these gaps.

Problem Statement

Integrating mobile applications into foreign language learning has transformed traditional educational methods by offering learners more interactive and personalized experiences. Despite their growing popularity, existing research reveals significant gaps in understanding the impact of individual learner characteristics—such as motivation, self-regulation, and cognitive styles—on the effectiveness of these applications. Earlier studies highlight the potential of mobile applications to enhance learning outcomes, engagement, and motivation [16][17][19]. However, many of these studies focus predominantly on general effectiveness, vocabulary acquisition, or comparisons between mobile and traditional methods, often neglecting the nuanced influence of learner differences on educational outcomes.

Moreover, recent technological advancements, such as mobile sensory features [18] and virtual reality integration [16], underscore the need to reassess strategies for optimizing mobile learning. The literature suggests that motivation, learning strategies, and outcomes are interrelated and significantly better in mobile learning environments [19], yet the mechanisms behind these relationships remain underexplored.

Therefore, this study addresses these gaps by exploring how individual learner differences affect the success of foreign language learning through mobile applications. Understanding these factors is critical for developing adaptive learning strategies that maximize educational outcomes and align with

the latest technological and pedagogical advancements.

3. METHODS

3.1. Design

Research design determines the overall strategy and plan for conducting research. Effective design is key to producing reliable and meaningful results. Figure 1 shows the stages of conducting this study.

3.2. Participants

The research was conducted at

- Western Caspian University — the Department of Azerbaijani Language and Literature at the Faculty of Philology and Translation;
- Kyiv Institute of the National Guard of Ukraine — the Department of Language Training;
- Dragomanov Ukrainian State University — the Department of Foreign Language Teaching Methods at the Faculty of Foreign Philology.

The respondents were selected by drawing lots among the students of the respective departments. The study involved a total of 300 third-fourth-year students: 125 male and 175 female students. The participants were divided into the EG — 150

students who used mobile applications during training, and the CG — 150 students who studied under normal conditions. A total of 10 experts were also involved in the study — teachers from the HEIs where the respondent students studied. The same team of teachers worked with both groups in the process of theoretical and practical training. This approach to the selection of respondents and the formation of groups contributes to obtaining objective data.

3.3. Instruments

The survey was conducted in GoogleForms to collect responses and the Viber messenger. Microsoft Excel and SPSS Statistics 19.0 were used for data processing. All analysed results are presented as a percentage of the total number of respondents, which contributes to a better understanding and evaluation of the obtained conclusions.

PREPARATORY STAGE (2022)

Development of an experimental curriculum. Selection of the methods of data processing. Formation of the EG and the CG. Development and application of pedagogical conditions for the EG

EXPERIMENTAL STAGE (2023)

For the EG, the application of pedagogical conditions is the use of mobile applications during the study of a foreign language. A training programme has been developed that includes the following steps.

The programme includes an introduction to mobile applications (Duolingo, Babbel, Memrise, Anki, Quizlet), how to set them up and use them to learn basic grammar, vocabulary, listening, pronunciation, reading, and writing. During the course, students perform daily exercises to consolidate knowledge, listen to audio lessons, complete written assignments and perform interactive tasks to develop oral communication skills.

Mentoring sessions and online groups provide additional support. Assessment includes weekly tests, midterm projects and a final exam. Regular student surveys and programme updates ensure its relevance and effectiveness.

Throughout the experiment, the dynamics of students' academic performance in the process of learning a foreign language was studied. Study of the formation of the respondents' vocabulary. Analysis of psychological aspects of using new vocabulary. Assessment of the level of foreign language communicative competence of students of both groups. Carrying out a correlational analysis between academic success and the level of foreign language communicative competence.

FINAL STAGE (2024)

Summary of research results, their further publication and presentation.

Figure 1: Research stages

3.4. Data collection

1. **Monitoring higher school students' academic performance.** Assessment of academic performance is based on four criteria: speaking, grammar, reading, listening. The method is practically implemented using the analysis of academic performance with the involvement of an expert group.

2. **Vocabulary Test** (<https://www.vocabulary.com/lists/kklwf7ac/vocabulary-coms-roadmap-to-the-act>). This test is used to measure the English vocabulary of graduates. It consists of 100 words that respondents have to identify.

3. **Vocabulary Confidence Scale (VCS)** is a psychometric instrument used to measure the respondent's perception of his/her own vocabulary [20]. The VCS consists of 25 statements that describe different aspects of vocabulary, such as word knowledge, ability to use words in sentences, and comprehension of complex texts. The respondents should rate their agreement or disagreement with each statement on a 5-point Likert scale [21].

4. **Expert evaluations.** This method the formation of students' communicative competencies in a foreign language was determined. For this purpose, the experts analysed the results of academic performance and used such criteria as: language competence, cultural sensitivity, adaptability and effective communication [22].

3.5. Analysis of data

1. **Student's t-test,** t-value is calculated:

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$$

(1)

where X_1 and X_2 denote the samples;
 n_1 – the number of respondents at the input test;
 n_2 – the number of respondents at the final test;
 s – root mean square error:

$$s_x = \sqrt{\frac{1}{(n-1)n} \sum_{i=1}^n (x - x_i)^2}$$

(2)

2. **Correlation analysis.** Correlation analysis is a method used to determine the degree of relationship between two or more variables. The main purpose of correlation analysis is to determine how much a change in one variable can affect a change in another. The coefficient r is determined by using the Pearson formula:

$$r = \frac{n(\sum XY) - (\sum X)(\sum Y)}{\sqrt{[n \sum X^2 - (\sum X)^2][n \sum Y^2 - (\sum Y)^2]}}$$

(3)

where n – number of observations,
 \sum – the sum of all values,
 X and Y – the values of two variables.

3. **The Cronbach's alpha reliability coefficient** characterizes the internal consistency of the test items. The Cronbach's alpha is calculated according to the formula:

$$\frac{N}{N-1} \left(\frac{\sigma_x^2 - \sum_{i=1}^N \sigma_{Y_i}^2}{\sigma_x^2} \right);$$

(4)

where σ_x^2 – total test score variance;
 $\sigma_{Y_i}^2$ – variance.

The null statistical hypothesis H_0 is that the development of foreign language communication skills does not depend on the use of mobile applications. The alternative statistical hypothesis H_1 is that the development of foreign language communication skills depends on the use of mobile applications.

4. RESULTS

The students' academic performance was monitored at the beginning and at the end of the study. The CG students studied under normal pedagogical conditions. The EG students used HelloTalk, Busuu and LingoDeer mobile applications while learning a foreign language. The monitoring results are presented in Table 2.

Table 2: Analysis of the monitoring of the EG and CG students' academic performance at the beginning and at the end of the study

Criterion	Group	At the beginning of the research	At the end of the research	p-value
Speaking	CG	70	80	0.05
	EG	72	90	0.01
Grammar	CG	65	75	0.02

	EG	68	85	0.001
Reading	CG	75	82	0.04
	EG	78	91	0.001
Listening comprehension	CG	72	80	0.03
	EG	75	88	0.001

The t-test is used to compare the means of two groups. A p-value of less than 0.05 is usually considered statistically significant. Analysis of the monitoring of the EG and CG students' academic performance at the beginning and at the end of the study shows a significant improvement in all criteria for both groups, with a more pronounced progress in the EG. In the Speaking criterion, the CG students improved their results, but EG students showed significantly greater progress. This indicates a significant impact of mobile applications on the development of language skills. The Grammar criterion shows that CG students also

improved their scores, but the EG students made a greater improvement. A significant advantage of the EG students is also visible here. Analysing the changes in the Reading criterion, the CG students showed improvement, while the EG students showed even more pronounced progress. The improvement in the EG is more significant. According to the Listening criterion, the CG students demonstrated positive dynamics, but the EG students made more progress. Table 3 presents the results of the Vocabulary Test for the EG and CG students

Table 3: Vocabulary test results for the EG and CG students

Group	n	Mean score (Accuracy)	Mean score (Width)	Mean score (Depth)	Mean score (Flexibility)	Mean score (Automatism)	t-test	p-value
CG	150	72	68	65	63	60	2.3	0.02
EG	150	78	74	71	68	65		

Table 3 shows that the average score of the CG students for all criteria is lower than that of the EG. This indicates that the EG students have better vocabulary than the CG students. The value of t-test 2.3 shows that this difference is statistically significant (p-value 0.02). The likelihood that such a difference in results could have arisen by chance is very small. Thus, the conditions under which the vocabulary of the EG students was formed were more favourable. Accordingly, we can draw a conclusion about the effectiveness of using mobile applications in the process of learning a foreign language. Table 4 presents the results of the Vocabulary Confidence Scale.

Table 4: The results of the Vocabulary Confidence Scale for the EG and the CG students

Group	n	Mean score	Standard deviation	t-test	p-value
CG	150	75.2	11.4	-2.34	0.019
EG	150	81.3	10.8		

The mean VCS score for the EG was higher than for the CG. The difference between the two groups was statistically significant ($t = -2.34, p < 0.05$). The obtained results indicate that the EG had higher vocabulary confidence than the CG. This is due to the EG participants' additional learning activities that focused on vocabulary. This additional activity was the use of mobile applications.

Figure 2 presents a diagram of the levels of foreign language communicative competencies for the CG and the EG.

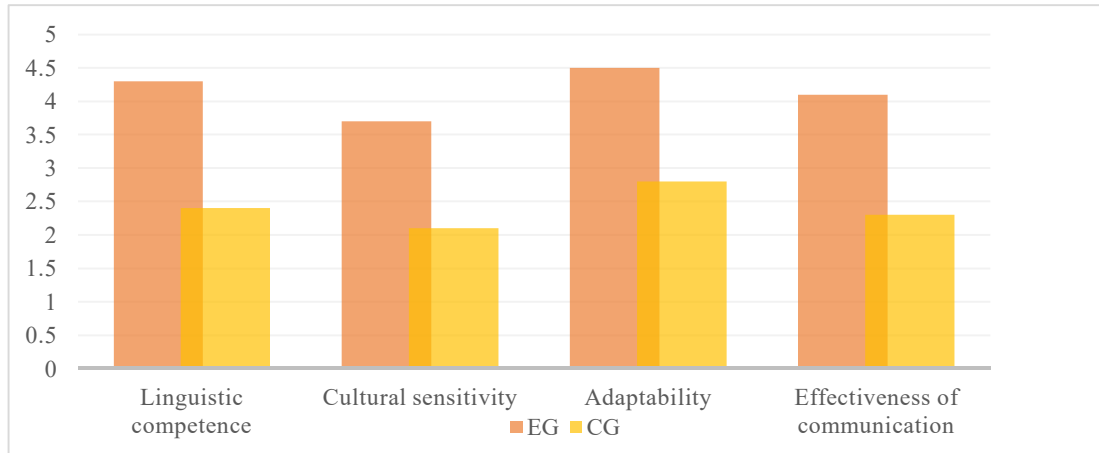


Figure 2: The levels of foreign language communicative competence for the CG and the EG

Source: created by the authors based on research results

The value of the Student’s t-test: Language competence: $t \approx 6.81$, Cultural sensitivity: $t \approx 6.99$, Adaptability: $t \approx 7.48$, Effectiveness of communication: $t \approx 6.36$. All t values exceed the critical value $t_{critical} \approx 2.787$ at $\alpha=0.05$. Therefore, the difference in scores between groups is statistically significant at the $\alpha=0.05$ significance level. So, the

positive impact of using mobile applications on learning a foreign language in HEIs can be stated. Table 5 presents the correlation analysis between the students’ academic performance and the level of foreign language communicative competence for the EG and the CG.

Table 5: Correlation analysis between students’ academic performance and the level of foreign language communicative competence for the EG and the CG

Group	Criterion	Correlation coefficient	p-value
CG	Linguistic competence - Cultural sensitivity	0.72	0.001
CG	Linguistic competence - Adaptability	0.68	0.001
CG	Linguistic competence - Effectiveness of communication	0.75	0.001
CG	Cultural sensitivity - Adaptability	0.65	0.001
CG	Cultural sensitivity - Effectiveness of communication	0.70	0.001
CG	Adaptability - Effectiveness of communication	0.62	0.001
EG	Linguistic competence - Cultural sensitivity	0.78	0.001
EG	Linguistic competence - Adaptability	0.74	0.001
EG	Linguistic competence - Effectiveness of communication	0.81	0.001
EG	Cultural sensitivity - Adaptability	0.71	0.001
EG	Cultural sensitivity - Effectiveness of communication	0.76	0.001
EG	Adaptability - Effectiveness of communication	0.68	0.001

Correlation analysis shows significant relationships between various criteria in both CG and EG students. In the CG, there are strong positive correlations between language competence and cultural sensitivity, adaptability, and communication effectiveness. This indicates that

improved linguistic competence is accompanied by increased cultural sensitivity, adaptability, and communication effectiveness.

Similar, but slightly stronger correlations are observed in the EG. In particular, correlations between language competence and other criteria

such as cultural sensitivity, adaptability and communication effectiveness are more pronounced than in the CG. This may indicate that the use of mobile applications promotes a closer relationship between these skills. All obtained correlation coefficients have a high level of significance (p-value 0.001), which confirms the reliability of the results. High correlations between cultural sensitivity, adaptability and communication effectiveness in both groups indicate the importance of developing these skills simultaneously to achieve better results in foreign language learning. So, based on all the obtained results, it is possible to conclude that hypothesis H_1 is accepted, which emphasizes the positive impact of the use of mobile applications during foreign language learning on the quality of students' learning.

5. DISCUSSION

The results obtained in this study indisputably indicate a positive effect of using mobile applications on improving the quality of foreign language learning. The study and analysis of academic literature on the problem of foreign language competence development based on the use of mobile applications in the educational process proved the existence of various directions of its research. The studies [23; 24] can be mentioned, which consider different approaches to learning a foreign language. According to the researchers, the development of foreign language competence based only on current manuals, without the involvement of additional means and the development of various and methodologically appropriate techniques, methods and forms of work is not rational and not effective. In this regard, the researchers [25; 26] emphasize the obvious need to increase the effectiveness of language training through the development and implementation of innovative information and communication technologies in the learning process, namely mobile applications, as well as the latest methods.

As this study showed, mobile applications enable students to learn anytime, anywhere. Their use enable creating a more flexible and personalized learning schedule, which is especially useful for those who have limited time to attend traditional classes. Such flexibility promotes regular and continuous learning, which, in turn, has a positive effect on the effectiveness of learning the material.

According to [27] and [28], mobile applications often use interactive learning methods that increase student engagement. Tasks that include gamification, audio and video materials, interactive exercises make the learning process more

interesting and motivating. The authors emphasize that this contributes to more active learning of knowledge and skills, and also maintains a high level of interest in the subject. The ability to receive instant results and recommendations allows students to learn from their mistakes faster and improve their knowledge without delay. This feature of mobile applications is emphasized in the works [29] and [30]. According to the authors, adaptive technologies are often used in applications that enable adjusting the educational process according to the individual needs and level of each student. This ensures more effective and targeted learning, as each student receives exactly those tasks and materials that correspond to his or her level of knowledge and pace of learning.

The studies in which the effectiveness of mobile applications is not so obvious should also be mentioned. The researchers [31], [32] and [33] stated that mobile applications can act only as an additional tool. In particular, their effectiveness can be high in the process of learning new vocabulary. Despite all the advantages of using mobile applications, the authors emphasize that learning a foreign language should be a complex process that includes a combination of classical and innovative methods and forms of teaching. The study confirms and expands existing theoretical knowledge about the effectiveness of using mobile applications in foreign language learning. It demonstrates that interactive mobile applications can significantly improve students' language skills, confirming hypotheses about the positive impact of gamification and interactive learning methods.

Practical implications have a number of features. First, the results can be used to develop and improve mobile applications for learning languages, making them more effective and adaptive to the users' needs. Second, it can be useful for teachers and educational institutions. Teachers can use mobile applications as an additional tool to improve the quality of teaching. Such benefits may include integrating mobile applications into curricula, using them for independent student work, or for additional practice of language skills outside the classroom.

The study contained several methodological limitations affecting its design and approaches. Using a specific metric to determine the level of digital competence may limit the generalizability of the results, as different approaches to measuring digital skills may lead to different conclusions. Students' self-assessment of their communicative competence may also be subjective, which may

affect the results because of personal preferences and biases.

Instrumental limitations may also have influenced the final results. AS the data were collected using a questionnaire, distortions are possible because of dishonest or misunderstood student responses. In addition, the considered aspects of digital and communicative competence may not cover all possible variations of these skills, which limits the universality of the obtained results. External factors such as seasonality or changes in the curriculum may affect the results and make them less representative.

The conclusions were drawn based on several key criteria: 1) the effectiveness of mobile applications in enhancing language skills, including speaking, grammar, reading, and listening comprehension; 2) the level of motivation and engagement among students using mobile apps compared to traditional methods; 3) the positive correlations found between language competence, cultural sensitivity, adaptability, and communication effectiveness; 4) the impact of mobile applications on overall student performance in foreign language learning; and 5) the potential for integrating these tools into educational curricula to enhance language teaching. These criteria collectively affirm the effectiveness of mobile applications in foreign language education.

6. DIFFERENCE FROM PRIOR LITERATURE

This study offers nuanced insights into the mechanisms driving the effectiveness of mobile applications in language learning, extending beyond the scope of previous research. While prior work [23; 24] broadly examined the application of mobile tools, this research establishes a direct correlation between personalized learning schedules facilitated by mobile apps and demonstrable improvements in language acquisition. Furthermore, contrary to studies [31; 32] that positioned mobile applications as merely supplementary, this investigation demonstrates the capacity of mobile apps, leveraging gamification and adaptive technologies, to significantly complement traditional pedagogical methods, resulting in enhanced student engagement and demonstrably improved performance. Building upon the foundation laid by research [27; 28] indicating increased motivation through interactive features, this study provides further evidence that these same interactive elements also facilitate accelerated learning through immediate feedback. Moreover, this research reinforces the previously observed benefits of mobile app flexibility in

supporting continuous learning beyond the traditional classroom. Still, it provides more robust empirical evidence of this effect, highlighting its contribution to an enhanced learning experience. Finally, and perhaps most importantly, this research underscores the critical importance of integrating mobile applications within a comprehensive and multifaceted pedagogical approach, thereby challenging the perspectives of scholars [25; 26] who advocated for a reliance on exclusively conventional or solely digital learning modalities.

7. CONCLUSIONS

The obtained results of the study show that the use of mobile applications for learning foreign languages is becoming increasingly important, as these tools offer flexible and interactive learning methods that can significantly improve the effectiveness of the educational process. *Findings.* The obtained results demonstrate that the use of mobile applications significantly improves students' language skills, including speaking, grammar, reading, and listening comprehension. Students who used mobile applications had higher motivation and engagement in learning compared to those who studied using traditional methods. Correlational analysis confirmed strong positive correlations between language competence, cultural sensitivity, adaptability, and communication effectiveness. All the obtained data testify to the significant effectiveness of mobile applications in learning foreign languages and emphasize the importance of their integration into the educational process. *Applications.* The results of the study can be widely used in various fields of education. Educational institutions can integrate them into the curricula of schools, colleges and universities to improve the quality of foreign language teaching. Teachers can use mobile applications as an additional tool to improve students' language skills. *Research prospects.* Further research may focus on studying the impact of different types of mobile applications on foreign language learning, which will help to determine the most effective methods. The effect of students' individual characteristics, such as the level of initial knowledge, learning style and motivation on the effectiveness of using mobile applications is also worth studying.

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