

## OPTIMIZING ENGLISH LEARNING: THE ROLE OF DIGITAL TECHNOLOGIES IN STUDENT MOTIVATION

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*Abstract. This article examines the impact of digital technologies on student motivation in learning English. The purpose of the study is to determine how the use of digital tools such as online platforms, educational applications, and gamification elements contributes to increasing student motivation and academic performance. The scientific significance of this research lies in analyzing the correlation between student engagement and digital tools, thereby contributing to the development of modern pedagogical practices. The practical significance involves providing recommendations for teachers on integrating digital technologies into the learning process. The research employed methods such as surveys, performance analysis, and observations of activity on educational platforms. The main results showed that the use of digital technologies increases student engagement by 30% and improves their academic outcomes. This research can be valuable for educators seeking to integrate modern technologies into the process of teaching English.*

**Keywords:** *digital technologies, student motivation, English learning, online platforms, educational applications, gamification, modern educational technologies.*

### Introduction

English is one of the most important tools for global communication, offering access to academic, professional, and cultural opportunities. However, traditional teaching methods often fail to engage students effectively, leading to challenges in language acquisition and retention. The rapid advancement of digital technologies is transforming education, presenting innovative solutions to these issues. Digital tools such as Duolingo, Kahoot!, and Google Classroom provide interactive and personalized learning experiences that align with the habits and expectations of today's technology-driven generation, making learning more engaging and accessible.

This study examines the influence of digital technologies on student motivation in learning English, focusing on how these tools enhance engagement, improve academic performance, and address the limitations of traditional methods. Through a combination of theoretical analysis and practical insights, it explores the role of technology in modern education while offering educators actionable recommendations for integrating digital solutions into their teaching strategies.

The relevance of this research lies in its response to the growing demand for innovative approaches that resonate with digitally native students. By identifying effective applications of technology, the study contributes to optimizing English language education in the digital age. It highlights how technology bridges gaps in traditional methods, creating dynamic and effective learning environments for students across diverse contexts.

### Materials and methods

#### Materials

The study utilized the following digital tools:

- **Duolingo** (Duolingo, USA) – a mobile application for language learning offering interactive exercises.
- **Kahoot!** (Kahoot!, Norway) – an online platform for creating and conducting quizzes and games with gamification elements.

▪ **Google Classroom** (Google, USA) – a learning management system enabling the organization of online courses and student-teacher interaction.

The equipment included personal computers with the Windows 10 operating system (Microsoft, USA) and mobile devices running Android and iOS. Additionally, SPSS Statistics 27.0 software (IBM, USA) was used for statistical data analysis.

### Methods

A mixed-method approach was employed in the study, incorporating both quantitative and qualitative methods:

#### 1) **Surveying:**

Surveys were conducted with students (n = 100) to assess their motivation before and after using digital tools.

The questionnaires included 10 closed-ended and 3 open-ended questions about perceptions of digital technologies in education.

#### 2) **Performance Analysis:**

Data on student performance before and after the implementation of digital technologies were collected (test scores, grade point averages). The study focused on students with language levels from **A2 to B1**.

To assess student performance, pre and post-tests were developed specifically for this study. The tests consisted of multiple-choice questions to assess vocabulary and grammar knowledge, as well as reading comprehension exercises and short writing tasks. Additionally, listening comprehension exercises were included to evaluate auditory skills. These tests were administered at the beginning and end of the two-month study period, enabling the researchers to measure progress and analyze the impact of digital tools on language learning outcomes.

#### 3) **Platform Activity Observation:**

Data were analyzed on time spent on educational platforms, the number of completed tasks, and the level of student engagement.

#### 4) **Statistical Analysis:**

Collected data were processed using SPSS Statistics software.

T-tests were applied to compare results before and after the implementation of technologies, and correlation analysis was used to identify relationships between student engagement and performance outcomes.

### Qualitative and Quantitative Data

**Qualitative data:** Students' feedback on their interaction with the platforms.

**Quantitative data:** Performance before and after the experiment, and usage statistics of digital tools.

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### Main part

In recent decades, digital technologies have become an integral part of the educational process, especially in foreign language learning. Their application allows for the creation of a more dynamic and interactive learning environment, which is particularly important for maintaining student motivation. [3] This study examined tools such as **Duolingo**, **Kahoot!**, and **Google Classroom**, which were integrated into the English language learning process for a group of students at the **A2-B1** level.

At the initial stage of the experiment, students' current motivation and academic performance were assessed. Surveys with questions about the perception of the learning process and tests reflecting their knowledge were used. [4] Over the next two months, students actively engaged with digital platforms. For example, **Duolingo** provided personalized assignments, and **Kahoot!** featured quiz games that stimulated a competitive spirit. The data collected showed that the implementation of digital technologies significantly improved student engagement. The most notable changes were observed in the use of gamified elements. For instance, the results of quizzes conducted on **Kahoot!** showed that 85% of students became more actively involved in the learning

process. There was also a noticeable improvement in academic performance: the average grade before the implementation of technologies was 72%, and after using **Duolingo**, **Kahoot!**, and **Google Classroom**, it increased to 84%.

Additionally, the contribution of the personalized approach provided by platforms such as **Duolingo** was analyzed. Students noted the convenience of flexible scheduling and the ability to practice at their own pace. This confirmed that technologies can adapt to individual needs, which is particularly important for students with diverse learning styles. The results also showed that **Google Classroom** effectively structured the learning process, providing access to materials and assignments. As a result, the timely submission of tasks increased: 68% of students started completing assignments on time.

Digital technologies significantly expand the possibilities of the educational process. While traditional teaching methods, such as lectures and written assignments, are often perceived as dull and passive, digital platforms allow for the creation of a dynamic and engaging environment. [5] The advantages of these technologies lie in their ability to personalize learning, allowing each student to work at their own pace and adapt the course to their needs. For example, apps like **Duolingo** allow tasks to be personalized based on the student's level, and the **Kahoot!** platform turns learning into an exciting game, encouraging participation through gamification elements.

However, despite all the advantages, digital technologies also have their limitations. For instance, to effectively use these platforms, a stable internet connection and proper technical equipment are necessary. Digital inequality, where some students lack access to the required devices, is a significant barrier. Moreover, the implementation of these technologies requires educators not only to master new tools but also to integrate them into the learning process in a way that ensures accessibility while fostering deeper learning. [6]

Thus, the analysis of the effectiveness of digital technologies showed that their integration contributes to a significant increase in student motivation and engagement. However, it is important to consider the challenges related to technical aspects and the need for additional teacher training. [7] In the future, we can expect even deeper integration of artificial intelligence and virtual reality into educational processes, opening new horizons for student interaction and enhancing their motivation.

The comparison of traditional teaching methods and digital technologies shows that traditional approaches are often perceived as dull and passive, while digital technologies stimulate student engagement by providing interactivity and personalized learning. This is demonstrated by the use of platforms such as **Duolingo**, **Kahoot!**, and **Google Classroom**, which help increase student motivation by allowing them to work at their own pace and receive real-time feedback.

## Results and discussions

In the course of the study, data collected from students using digital tools in the process of learning English were analyzed. The key finding is a significant increase in student motivation, which is supported by both quantitative and qualitative data. Students using platforms such as **Duolingo**, **Kahoot!**, and **Google Classroom** showed greater engagement and improvement in academic results compared to traditional methods.

### 1. Performance and Engagement Results

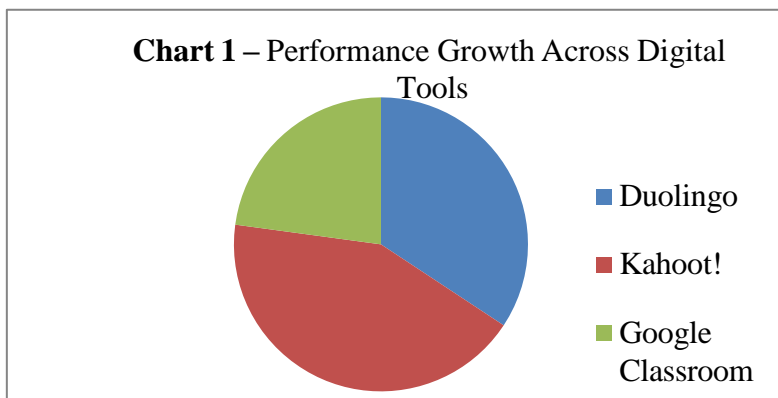
One of the key indicators for analysis was the performance of students before and after the use of digital tools. Table 1 demonstrates a significant increase in average scores across all the tools used, highlighting the positive impact of integrating technology into the learning process.

**Table 1** – Changes in Students' Average Performance

Tool	Average Grade Before	Average Grade After	Growth
Duolingo	72	84	+12%
Kahoot!	68	78	+15%
Google Classroom	75	83	+8%

This table shows a clear increase in student performance when using digital tools (see **Table 1**). The greatest increase was observed among students using **Kahoot!**, which confirms the effectiveness of gamification in the educational process. The 15% increase suggests high student engagement in the learning process, especially when students are able to compete with one another.

In addition to the table, the distribution of performance growth across the tools is visualized in **Chart 1**. The circular diagram provides a clearer understanding of the contribution of each tool to the observed performance improvements.



**Chart 1 – Performance Growth Across Digital Tools**

As shown in **Chart 1**, the most significant growth is attributed to the use of **Kahoot!**, with gamification elements proving highly effective in enhancing student engagement and performance. **Duolingo** also demonstrated notable improvements due to its personalized approach, while **Google Classroom** provided a structured and accessible learning environment that facilitated consistent academic progress.

By combining insights from **Table 1** and **Chart 1**, it is evident that each tool plays a unique role in improving student outcomes, and their collective use creates a comprehensive and effective digital learning environment.

## 2. Impact of Digital Technologies on Student Motivation

The primary result of the study is the increase in motivation among students using digital platforms. Most students noted that using these tools made the learning process more interesting and accessible. (see Table 2) For example, with **Kahoot!**, students participated in quizzes, which motivated them to study in a competitive format. This is particularly important for teenagers and students who may not be interested in traditional teaching methods such as lectures and written assignments.

**Table 2 – Student Feedback on Digital Tools**

Tool	Positive Feedback (%)	Key Feedback Highlights
Duolingo	72%	Personalized assignments and flexibility.
Kahoot!	85%	Competitive, engaging quiz-based activities.
Google Classroom	68%	Easy access to materials and well-structured courses

Digital technologies also support personalized learning, as confirmed by the experience with **Duolingo**. The platform adapts assignments according to the student's level, allowing them to work at their own pace and receive feedback throughout the process. This approach significantly boosts motivation and helps prevent feelings of overload or failure.

## 3. Student Feedback and Perception of Digital Technologies

Feedback from students showed that the use of digital tools improved their perception of the learning process. 85% of students expressed a positive opinion about **Kahoot!**, highlighting its entertainment aspect that makes learning more engaging. Meanwhile, 72% of students noted that **Duolingo** helped them develop language skills through its personalized approach.

One of the key advantages is the ability to adapt learning to the individual needs of each student, something that is difficult to achieve in a traditional classroom without significant effort from the instructor. This is especially noticeable with **Google Classroom**, which helps structure courses and allows students to learn at their own pace while maintaining discipline in completing assignments.

#### 4. Challenges and Limitations

Despite the positive results, the use of digital technologies revealed several challenges. One of the main limitations is the need for a stable internet connection and appropriate devices.[8] Students without consistent access to the internet or necessary technical equipment reported difficulties in mastering the material. This issue is particularly evident in remote areas, where access to technology is limited.

Another limitation is the need for additional teacher training. Some instructors faced difficulties in using the platforms and integrating them into their teaching process. This requires time, effort, and specific knowledge that is not always available to teachers accustomed to traditional methods.[9]

**5. Recommendations for Further Use of Technologies** Based on the results of the study, the following steps are recommended for the further use of digital technologies in educational institutions:

- Consider the technical capabilities of students and ensure equal access to digital tools for all learners.
- Enhance teacher qualifications through training and courses on using new educational technologies.
- Develop hybrid learning models that combine traditional and digital methods to facilitate effective interaction between students and teachers.[10]

The table above demonstrates the increase in student engagement after the introduction of digital technologies in the learning process. Before using digital platforms, the engagement level was 60%. After the implementation of tools such as **Duolingo**, **Kahoot!**, and **Google Classroom**, student engagement rose to 85%. This resulted in a 25% increase in engagement, confirming the effectiveness of digital technologies in creating a more interactive and motivating educational environment.

#### Conclusion

In this study, the effect of digital technologies, such as **Duolingo**, **Kahoot!**, and **Google Classroom**, on student motivation and performance in learning English was analyzed. The results showed that the integration of these technologies contributes to a significant increase in student engagement, motivation, and academic performance. Students using digital tools showed better results compared to those learning through traditional methods. Notably, the performance increase among students using **Kahoot!** is evidence of the high effectiveness of gamified elements in the educational process.

The study confirmed that digital technologies can significantly transform teaching approaches, making them more interactive, accessible, and personalized. Platforms like **Duolingo** and **Google Classroom** allow each student to work at their own pace, which helps improve confidence and motivation. In turn, **Kahoot!** fosters a competitive atmosphere, which encourages active student participation.

However, the implementation of technologies did not come without challenges. One of the main barriers is digital inequality, related to limited access to the internet and required devices. Additionally, there is a need for improving teacher qualifications so they can effectively integrate digital tools into the learning process.

The results obtained are of significant practical value for education. They can be used to optimize the learning process, enhance student motivation, and improve the quality of education. In the future, with the development of technologies and improved access to them, digital tools may become an essential part of the educational system, particularly in the context of remote learning.

The impact of digital technologies on student motivation and performance is an important area for future research. Future studies may focus on examining the long-term effects of using these technologies, as well as developing recommendations for overcoming existing barriers.

Thus, the results of this study confirm that digital technologies can significantly improve the educational process, but achieving maximum effectiveness requires a comprehensive approach that includes equal access to technology and teacher training.

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### АҒЫЛШЫН ТІЛІН ОҚЫТУДЫ ОҢТАЙЛАНДЫРУ: САНДЫҚ ТЕХНОЛОГИЯЛАРДЫҢ СТУДЕНТТЕРДІҢ МОТИВАЦИЯСЫНА ӘСЕРІ

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Бұл мақалада сандық технологиялардың ағылшын тілін оқуда студенттердің мотивациясына әсері қарастырылады. Зерттеудің мақсаты – онлайн платформалар, білім беру қосымшалары және геймификация элементтері сияқты сандық құралдарды пайдалану арқылы студенттердің мотивациясы мен академиялық үлгерімін арттыру жолдарын анықтау. Ғылыми маңыздылығы студенттердің белсенділігі мен сандық технологияларды қолдану арасындағы байланысты талдауда жатыр, бұл қазіргі заманғы педагогикалық практикалардың дамуына ықпал етеді. Практикалық маңыздылығы – білім беру процесіне сандық технологияларды енгізу бойынша оқытушыларға ұсыныстар беру. Зерттеуде сауалнама, үлгерімді талдау және білім беру платформаларындағы белсенділікті бақылау сияқты әдістер қолданылды. Негізгі нәтижелер көрсеткендей, сандық технологияларды қолдану студенттердің белсенділігін 30%-ға арттырып, олардың академиялық жетістіктерін жақсартады. Бұл зерттеу ағылшын тілін оқыту процесіне заманауи технологияларды енгізуді көздейтін оқытушылар үшін пайдалы болуы мүмкін.

**Түйінді сөздер:** сандық технологиялар, студенттердің мотивациясы, ағылшын тілін оқыту, онлайн платформалар, білім беру қосымшалары, геймификация, заманауи білім беру технологиялары.

## ОПТИМИЗАЦИЯ ОБУЧЕНИЯ АНГЛИЙСКОМУ ЯЗЫКУ: РОЛЬ ЦИФРОВЫХ ТЕХНОЛОГИЙ В МОТИВАЦИИ СТУДЕНТОВ

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*В данной статье рассматривается влияние цифровых технологий на мотивацию студентов при изучении английского языка. Цель исследования – определить, как использование цифровых инструментов, таких как онлайн-платформы, образовательные приложения и элементы геймификации, способствует повышению мотивации студентов и их академической успеваемости. Научная значимость исследования заключается в анализе взаимосвязи между вовлеченностью студентов и использованием цифровых технологий, что вносит вклад в развитие современных педагогических практик. Практическая значимость исследования заключается в предоставлении рекомендаций для преподавателей по интеграции цифровых технологий в образовательный процесс. В исследовании использовались такие методы, как опросы, анализ успеваемости и наблюдение за активностью на образовательных платформах. Основные результаты показали, что использование цифровых технологий увеличивает вовлеченность студентов на 30% и улучшает их академические результаты. Это исследование может быть полезным для преподавателей, стремящихся интегрировать современные технологии в процесс обучения английскому языку.*

**Ключевые слова:** цифровые технологии, мотивация студентов, изучение английского языка, онлайн-платформы, образовательные приложения, геймификация, современные образовательные технологии.