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Krzysztof Polok
https://orcid.org/0000-0002-0283-9665
University of Bielsko-Biala, Poland
kpolok@ubb.edu.pl

Małgorzata Przybysz-Zaremba
https://orcid.org/0000-0003-2542-5104
Ignacy Moscicki University of Applied Sciences in Ciechanów, Poland
malgorzata.zaremba@puzim.edu.pl

Natalia Szweda
http://orcid.org/0009-0001-2239-4691
Language School "English Planet" in Goczalkowice, Poland
natgoogszwed@gmail.com

The Role of New Technologies in Enhancing Primary School Students' Language Skills

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Abstract

Research objective and problems: The utilization of modern technologies into various forms for primary English language teaching and learning has progressively become standard practice worldwide, largely because the new generation of students has grown up in a digital era. It is undeniably true that technology continues to play a significant role in contemporary society. In today's globalized world the English language holds a dominant position influencing nearly every aspect of human life, including education, politics, trade, communication and science. Consequently, the importance of teaching English as a foreign language (EFL) in schools has increased around the world. For 21st century learners, new technologies are second nature, as children interact with them from early age. Therefore, teaching

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methods and techniques must be adapted to meet the actual needs of today's learners.

Research methods: The study employed a quasi-experimental research design, which involves manipulating an independent variable, without randomly assigning participants to conditions or orders of conditions.

Structure of the article: The article begins with an introduction followed by a detailed description of the research methods and findings. It concludes with a discussion of key conclusions and research limitations.

Research findings and their influence on the development of pedagogical science: The study demonstrated incorporating various technological tools enhances the quality of instruction, fosters genuine interest in the subject matter, and encourages student creativity throughout the process of learning a second (foreign) language. Moreover, the use of technology noticeably reduces instances of classroom disruptions caused by students.

Conclusions and/or recommendations: The results clearly indicate that the introduction of new technologies in teaching and learning a new language is much more beneficial than the traditional teaching methods, as evidenced by statistical analysis.

***Keywords*:** new technologies, teaching and learning EFL, primary school students, language skills

Introduction

The fundamental skills of English language instruction include listening, reading, speaking, and writing. With the advent of various ICTs (Information and Communication Technologies) each of these language skills can now be mastered in a modern, engaging and student-centered way. Devices such as mobile phones, computers, laptops, tablets and other technologies, along with Internet resources and diverse ICT applications, enable students and teachers to learn and teach more conveniently and comfortably. These tools increase students' motivation to learn and explore the English language, while providing teachers opportunities

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to improve the quality of their lessons and actively engage students to boost their language skills. There is a constant need to raise awareness among students, teachers and parents about the benefits that ICTs can bring to the educational process. As technology permeates daily life, its application in the educational system must be thoughtful and purposeful.

The main aim of this paper is to illuminate the importance of adopting new technologies into English language teaching and learning for primary school students. Additionally, this study seeks to assess the extent to which modern technologies can support the development of primary students' language skills. To answer the primary research questions and test the hypothesis, an experimental study was conducted. Another important goal of this study was to demonstrate how carefully selected ICT tools can contribute to achieving the objectives of education for sustainable development (Brooks, 2012). This form of education is recognized as a key to advancing progress across all global development goals. Students should be taught to make informed decisions and take action, both individually and collectively, to catalyze social change and protect the planet. This goal can be obtained by equipping students with the knowledge and skills necessary to tackle an array of global issues such as climate change and the overuse of resources, both of which profoundly impact the well-being of people and the world.

The following research activities were planned for this study: First, two groups of elementary school children (6th and 7th grade) were selected using the convenience sampling technique and in accordance with the principles of experimental research design. Before beginning the experiment, both groups took a pre-test. The experimental phase then proceeded, with the experimental group (hereafter referred to as G1) engaging in lessons incorporating various new technologies for six months, while the control group (hereafter referred to as C) was taught using traditional teaching methods. At the conclusion of the study, both groups took a post-test, followed by a retention test two weeks later.

The primary research hypothesis anticipated that G1 would achieve better results compared to C. If validated, this would provide strong evidence supporting the necessity of introducing new technologies into

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classrooms, regardless of the age of the language learners. Naturally, all pre-research and research activities—including the experiment phases and subsequent analyses—were carried out collaboratively. The teaching activities for both groups, including lesson design, were handled by a single teacher, whereas the two other authors of this paper oversaw all post-teaching research activities.

Ethical considerations were carefully addressed. First, the families of the participating students were informed about the experiment and assured that the planned procedures would not negatively affect the students' ultimate academic outcomes. This assurance stemmed from the fact that the students were not complete beginners and that the primary aim of the teaching methods was to demonstrate the benefits of using ICTs to promote sustainable development in learners. Second, the school principal was fully briefed on the planned study, and her permission was obtained to proceed with the outlined procedures. The principal was also informed about the final results of the study. Additionally, approval was secured to alternate the teaching methods used for the two groups in the following term to ensure that the overall instructional outcomes for both groups would be balanced by the end of the year-long process of foreign language instruction.

Lastly, an unexpected outcome of this study, which took place in a rural school, was the demonstration that the application of ICT tools is effective regardless of the setting in which they are implemented.

Literature Review

The way teachers teach and students learn has significantly changed in recent years as a result of the growing use of new technologies in English language education ICT tools have become an inseparable part of EFL (English as a Foreign Language) classrooms. In the context of English teaching and learning, ICT primarily refers to computer-based technologies such as desktops, laptops, tablets, and smartphones, as well as software and internet-based resources like email, webpages, and social

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networking sites (Davies & Hewer, 2009). The integration of technology into EFL is now widely recognized as a crucial element of effective teaching and learning.

Today, both students and instructors can utilize technology-assisted EFL as a tool for accelerating the teaching and learning of English. At many educational institutions worldwide, technology has become an essential component of the curriculum and of language study and instruction. However, conventional methods of teaching foreign languages are still used in certain schools and institutions, particularly in developing countries. The adoption of a wide range of technologies can enhance and support the teaching and learning of foreign languages for both students and teachers. Moreover, it could potentially displace more traditional approaches to language acquisition (Liu, 2011).

The importance and global status of the English language have risen substantially due to globalization. As a result—and partly due to the internet revolution—English language education has become increasingly significant. Advances in science and technology have facilitated the development of numerous technological tools, including computers, mobile devices like smartphones and tablets, digital cameras, social media platforms, software applications, and the Internet. These resources make teaching and learning English more accessible and efficient. The concept of "integration" is frequently discussed in relation to how technology is employed in teaching and learning. Eady and Lockyer (2013) argued that it is time to move beyond merely incorporating technology into the curriculum and instead focus on embedding it into teaching practices to enhance the learning process. As technology becomes an intrinsic part of the educational experience, it poses challenges for instructors from the initial stages of designing learning experiences to the implementation of teaching and learning.

The classroom environment has improved with the integration of new technologies, which assist instructors in meeting the educational needs of their students (Bennett *et al*., 2000). According to Bransford *et al*. (2000), the use of computer technology empowers both educators and students to create local and global communities that foster connections

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and expand learning opportunities. Research by Baytak *et al*. (2011), further demonstrates that incorporating technology into the classroom enhances student learning. Their findings reveal that technology not only improves learning outcomes but also makes the learning process more enjoyable. Additionally, it boosts students' motivation, social connections, engagement, and overall learning experience. Numerous technological tools are available for use in EFL classrooms to help students develop both technological proficiency and language skills. Gholaminia Tabari (2014) sheds light on the growing demand for technology that provides resources and instructional methods for creating an exciting, motivating, and engaging environment for language acquisition.

The use of technology in foreign language learning also impacts the development of communicative skills. By incorporating Internet resources into both classroom activities and independent study, students can improve their listening, speaking, reading, and writing skills. As Oxford (1990, p. 79) points out, new technologies offer more than just drills, as they can serve as "a medium of real communication in the target language, including composing and exchanging messages with other students in the classroom or around the world." Through the use of ICTs and the World Wide Web, students develop online communication skills, participate in discussions, analyze issues, solve problems, think critically, and negotiate meaning. In general, technology provides foreign language learners with limitless educational resources, and enables them to master a variety of English language skills as a second language.

Sabti and Chaichan (2014) note that advancements in educational technology have gradually introduced new teaching and learning approaches in EFL classrooms. The rapid growth of technology has transformed education as a whole and significantly expanded its role in language learning and instruction, particularly in English language teaching. Similarly, Kim (2008) argues that the use of technology in learning settings has shifted the nature of interaction between students and teachers, moving foreign language education from teacher-centered to learner-centered approaches. The integration of technology places the focus of the learning process on the learners themselves regardless of their age.

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Technology enhances the classroom environment and allows students to take control of their own learning processes.

Human beings cannot exist without communication and language is the primary tool for this purpose. It is the medium through which we express ideas and connect with one another. Therefore, we need to learn how to use language effectively in real-world, practical contexts. Acquiring language skills—defined as the ability to use a language accurately and appropriately—is fundamental to achieving this goal. The four core language skills—listening, reading, speaking, and writing—are indispensable components of language education. For successful and effective instruction in foreign language courses, each of these skills must be developed and reinforced in accordance with the learners' levels and needs.

As Scrivener (2011) observes, both receptive skills (reading and listening) and productive skills (speaking and writing) are commonly used interactively and in combination rather than in isolation. Incorporating new technologies into teaching and learning processes can greatly enhance access to materials where these skills are integrated.

Effective language learners must develop all four language skills to communicate proficiently in a variety of contexts. Each skill complements and reinforces the others, and they all contribute to overall language proficiency. Learners can improve their language abilities through a variety of methods, including consistent practice, exposure to authentic materials, and targeted instruction in grammar and vocabulary.

Reading, in particular, is the foundation for studying across disciplines. In every area of life, efficient reading enhances a person's ability to function effectively. Many scholars agree that reading is one of the most crucial abilities for academic and professional success. According to Kim & Krashen (1997), those who read more tend to have larger vocabularies, perform better on grammar tests, and write better. Millions of students worldwide prioritize learning to read in a second or foreign language. Aebersold & Field (1997) observe that there is an increasing need for both effective reading programs and high-quality second language reading resources. Similarly, Maduabuchi (2007) stresses that comprehension, as a receptive language process, is the result of an interaction between

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the reader and the text. This interaction involves language and thought, as the writer encodes ideas into language, and the reader decodes them into meaning. Since reading is such a crucial ability, teaching it is inherently complex and demanding. Reading comprehension is described by Oakhill *et al*. (2015) as a complex task that integrates cognitive abilities and skills such as word recognition, decoding, and mastery of the language presented in the text. Readers must decipher the codes that the authors frequently use, such as idioms, synonyms, and antonyms. This implies that readers must acquire language knowledge to recognize words, decode text, and ultimately comprehend what they are reading.

Listening, on the other hand, is the receptive aspect of spoken communication and involves to the capacity to understand what is heard. Effective listening requires not only grasping the content of the spoken message but also interpreting, analyzing, evaluating, and assessing what is being said. As an essential component of foreign language (FL) teaching and learning, listening skills are integral to language acquisition. Sevik (2012) asserts that listening is as important as reading since both are receptive skills that focus on acquiring information from an external source. Unlike productive skills, listening and reading allow students to receive and understand language without producing it. However, despite being a receptive skill, listening is a sophisticated interpretative process in which listeners compare the input they hear with their existing knowledge.

According to Harmer (1998, p. 79), writing proficiency "has been acknowledged as one of the essential skills for language learning." Harmer emphasizes the importance of teaching writing to EFL students and points out factors that support this skill, including reinforcement, language growth, learning preferences, and writing as a valuable skill in its own right. Similarly, Al-Buainain (2009) describes writing as a language skill that requires multiple competencies, including handwriting, punctuation, spelling, vocabulary, grammar, and techniques for planning, reviewing, and editing written work. Writing, therefore, is the ability to communicate ideas through the graphic representation of language.

Speaking is a productive skill that learners must develop to communicate effectively and fluently. Mastering speaking skills is a priority for

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many EFL learners, who often evaluate their success in language learning based on their improvements in spoken language proficiency (Richards, 2009). Davis & Pearse (2000) similarly observe that the primary goal of teaching English is to equip students with the skills necessary for successful communication in the language. Speaking instruction has historically been underestimated, which led to the adoption of ineffective teaching methods such as drill repetition and dialogue memorization as the sole strategies for teaching speaking. However, in the 21st century, speaking instruction must help enhance students' communication skills in meaningful ways. According to Nunan (2003), effective speaking instruction should teach learners to: (1) produce English speech sounds and sound patterns, (2) use word and sentence stress, (3) apply patterns of intonation and rhythm in the language, (4) choose appropriate words and sentences based on the social setting, audience, situation, and subject matter, (5) organize their thoughts in a meaningful and logical sequence, (6) use language to express values and judgments, and finally (7) communicate quickly and confidently with natural pauses, which is recognized as fluency.

New technologies offer English language learners a range of tools and resources to enhance their language skills in a variety of ways. By utilizing these tools and platforms, students can gain a deeper understanding of the English language while becoming more confident and fluent communicators. Furthermore, integrating new technologies into the classroom benefits teachers as well. These tools can help educators support their students in developing English language skills more efficiently and effectively.

Method

This study investigated the influence of new technologies on enhancing primary students' language skills using a pretest-posttest quasi-experimental design with a paired control group. This method was chosen based on the core principle of quasi-experimental research, which involves

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the manipulation of an independent variable without the random assignment of participants to conditions or orders of conditions (Fraenkel, Wallen, & Hyun, 2012). Random assignment was not feasible in the school where the study was conducted because the groups consisted of equivalent classes from higher grades (6th and 7th). Therefore, the quasi-experimental model was deemed appropriate. The authors strongly believe that this methodological choice provides a robust framework for answering the main research question.

Drawing from the literature and recent studies on the impact of new technologies on developing EFL students' language skills, as well as our personal interest in the topic, the study aimed to answer the following primary research question: To what extent does the use of selected new technologies help Polish primary school students enhance their language skills?

In an attempt to answer this research question, four hypotheses were formulated:

H1: There is a difference in students' proficiency in reading when they are taught using new technologies compared to traditional methods.
H2: There is a difference in students' proficiency in writing when they are taught using new technologies compared to traditional methods.
H3: There is a difference in students' proficiency in listening when they are taught using new technologies compared to traditional methods.
H4: There is a difference in students' overall English proficiency in reading, writing, and listening when they are taught using new technologies compared to traditional methods.

Participants

An experimental study was conducted, with the experimental and control groups selected using the convenience sampling technique in line with the principles of experimental research design. The research was carried out in our private school, which we have operated for two years. The school is located in Goczałkowice-Zdrój, a village in southern Poland

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in the Silesia Province. Both the experimental and control groups were designed to be comparable. Factors such as the students' prior English proficiency, gender, and age were taken into consideration when selecting participants for the two groups. Each group consisted of 10 eighth-grade Polish primary school students from the same public school in Goczałkowice-Zdrój who had been attending extra English classes at our private school for the past two years. The selected students are believed to be the most relevant participants due to their current level of English proficiency. Moreover, we have been monitoring their progress during the past year of extra classes and were able to confidently assign students to the control and experimental groups without hesitation.

Instrument

Experimental models are governed by three fundamental guidelines: (1) control group, (2) pre- and post-testing, and (3) random assignment. Table 1 provides an overview of the experimental design employed in this study.

Table 1: Overview of the Research Design

Groups	Pre-test	Experimental Process	Post-test	No practice	Retentiontest
G1	T1	ICT-enhanced English teaching and learning	T2	2 weeks	T3
C	T1	Traditional English teaching and learning	T2		T3

In this study, G1 stands for the experimental group, which followed an ICT-enhanced English teaching program, while C represents the control group, which received traditional English language instruction. Both groups completed a pre-test (T1) before the experiment began. After the experimental process concluded, a post-test (T2) was administered to both groups. Both the pre-test and post-test were English achievement tests. Two weeks after the post-test, the English achievement test was administered again to both groups as a retention test (T3).

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Procedure

The study employed *A2 Key* standardized tests provided by Cambridge Assessment English. To be able to answer the main research question and evaluate the listed hypotheses, we designed the pre-test and post-test based on sample tasks from the *A2 Key* exams. It is believed that the tasks on the *A2 Key* examination are comparable to those on the English Eighth-Grade Exam, which the participants are scheduled to take in May 2023. The structure of the *A2 Key* examination enables an assessment of three specific language skills: reading, listening, and writing. These skills are also tested in the Eighth-Grade Exam, so we anticipate that the participants will not only benefit from improved language skills but also be better prepared for their final primary school foreign language examination in May.

At the beginning of the 2022/2023 school year, the first part of the study—the pre-test—was conducted. Ten students in the experimental group (G1) and ten students in the control group (C) were asked to take Test 1. Clear instructions were provided for each task, and the students were expected to complete the test within the allotted 90 minutes. Once the students submitted their tests, we began checking them and comparing the results. Following the analysis of the pre-test results, the experimental process commenced. Over six months (from September 2022 to March 2023), the two groups participated in lessons using the selected teaching methods. Classes were held once a week and each session lasted 60 minutes, amounting to a total of 24 lessons for each group. The control group was taught using traditional methods of English language instruction. The lessons were mainly based on the students' course books and workbooks. Additionally, the students were given paper worksheets to complete and were asked to take paper-based achievement tests to assess their current level of knowledge. Reading skills were developed through various exercises in the course books and workbooks. Learners were also taught the rules for writing short e-mails and stories. Listening skills were practiced through tasks from the course books.

However, we observed that these lessons were not interesting enough for the students. Very often they displayed a lack of interest in the materials

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and topics presented. A noticeable lack of motivation for doing additional work was also noted. Student participation during the classes was not satisfactory, as the classes were largely teacher-centered. The materials were presented by the teacher, then the students practiced them; the classes were conducted in a monotonous and repetitive manner, without new technologies integrated into these lessons.

The experimental group was taught using various new technologies that we proposed. Course materials were mainly presented in an interactive format, with the use of tools such as interactive whiteboards, laptops, and smartphones. All tested skills were enhanced through the use of websites, applications, and other modern technologies. The students practiced their reading skills using various Internet resources and mainly engaging with interactive, online texts. Writing skills were developed through numerous interactive exercises. Students were asked to compose short e-mails and stories to their peers using smartphones and social networking sites such as Facebook and WhatsApp. Listening skills were mainly developed through the use of authentic materials readily available online.

Our observations revealed that the students had a highly positive attitude toward the classes. Attendance was consistent, with students rarely absent, and their participation in class activities was impressive. They displayed a high level of motivation when requested to do some extra work. The classes were predominantly student-centered. Very often the students suggested topics of interest for class discussions. This resulted in noticeable engagement, as well as consistent preparation for each lesson. In March 2023, the post-test was administered to both groups. The results of the post-test, along with a detailed comparison with the pre-test results collected at the beginning of the experimental process, will be presented below. There was no instruction or practice for two weeks after the post-test. This deliberate pause allowed the researchers to assess the students' retention of knowledge after this interval. At the end of March, the students were asked to complete a retention test to evaluate the knowledge they retained.

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Results

The principal aim of this research was to test the four stated hypotheses, which were intended to help find the answers to the main research question. With the use of a pretest-posttest quasi-experimental design, we were able to evaluate these hypotheses and make some general conclusions on the potential benefits of new technologies for primary school students' achievements in English, especially in enhancing their language skills.

At the beginning of the 2022/2023 school year, students from both groups were asked to take a pre-test designed to assess three specific language skills: reading, writing, and listening. Following this, the experimental method was implemented over a six-month period.

The control group participated in extra English language classes conducted using traditional methods that primarily relied on standard paper-based course books, workbooks, and other teacher-provided materials, with a marked absence of the selected new technologies.

In contrast, the experimental group attended extra English language classes where numerous selected new technologies were incorporated into the teaching and learning processes. These students predominantly used electronic versions of course books and workbooks, e-dictionaries, different kinds of educational applications and websites, as detailed in the theoretical section of this study.

After six months of implementing the experimental process, both groups took a post-test, once again assessing the three targeted language skills: reading, writing, and listening. The results from both the pre-test and post-test were analyzed and compared to identify changes in the students' performance across the three language skills, with separate evaluations for reading comprehension, writing, and listening comprehension. Finally, the results for all three skills were aggregated for both the pre-test and post-test to evaluate the overall change in students' proficiency.

To test the first hypothesis, the reading comprehension scores from the pre-test and post-test for the two groups of students were compared. The results showed an increase in the number of points scored on the

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post-test for both groups. The mean score for the control group increased from 18 to 20.7 points, while the mean score for the experimental group rose from 17.8 to 24.9 points. After the pre-test, the mean scores in both groups were very similar: 18 points for the control group and 17.8 points for the experimental group.

However, after the post-test, the difference in mean scores between the two groups became more pronounced. The control group achieved a mean score of 20.7, whereas the experimental group achieved a mean score of 24.9. This indicates a difference in reading proficiency between students taught using new technologies and those taught using traditional methods. Students in the experimental group outperformed their peers in the reading comprehension section of the test. These findings suggest that the integration of new technologies into the learning and teaching process helped students achieve better results in reading comprehension.

To test the second hypothesis, the writing scores from the pre-test and post-test for the two groups of students were compared. The results also showed an increase in post-test scores for both groups. The mean score for the control group rose from 16.9 to 19.7 points, while the mean score for the experimental group increased from 18.4 to 23.3 points. Notably, the mean score for the control group remained lower than that of the experimental group in the post-test, with scores of 19.7 and 23.3 points, respectively. This demonstrates a difference in writing proficiency between students taught using new technologies and those taught using traditional approaches. The experimental group outperformed the control group in this part of the test as well. These findings reveal that the learning and teaching process involving new technologies helped students achieve better results in the writing section of the test.

To test the third hypothesis, the listening comprehension scores from the pre-test and post-test for the two groups were compared. The results showed an increase in post-test scores for both groups. The mean score for the control group increased from 17.5 to 18.6 points, while the mean score for the experimental group rose from 18 to 23.2 points. After the post-test, the difference in mean scores between the two groups

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became more noticeable, with the control group achieving a mean of 18.6 points and the experimental group achieving 23.2 points. These findings suggest a difference in listening proficiency between students taught using new technologies and those taught using traditional practices. Students in the experimental group performed better in this part of the test, which indicates that the inclusion of new technologies into foreign language learning and teaching contributed to improved listening comprehension results.

To test the fourth hypothesis, the combined scores for reading, writing and listening comprehension from the pre-test and the post-test were compared between the two groups. The results showed an increase in post-test scores for both groups. The mean score for the control group climbed from 52.4 to 59 points, while the mean score for the experimental group grew from 54.2 to 71.4 points. After the pre-test, the mean scores in both groups were relatively similar: 52.4 points for the control group and 54.2 points for the experimental group. However, following the post-test, the difference in mean scores between the groups became significantly larger, with the control group scoring 59 points and the experimental group scoring 71.4 points.

These results indicate a clear difference in proficiency in reading, writing, and listening between students taught using new technologies and those taught using traditional methods. Students in the experimental group performed better overall in the test. This demonstrates that the adoption of new technologies in foreign language learning and teaching helped students enhance all three examined language skills. The hypotheses allowed us to conclude that the process of teaching and learning using new technologies has a positive impact on students' academic achievements. Moreover, new technologies significantly enhance learners' language skills.

During the experimental process, we made additional observations regarding differences in the behavior of the two groups. Students in the control group, who were taught using traditional methods, exhibited less motivation and considerably lower levels of engagement during lessons. They often expressed frustration with completing yet another paper

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worksheet or exercise in their course-books or workbooks. Many students explicitly requested more interactive versions of the exercises. They showed interest in learning new vocabulary or grammar, but this interest was limited to activities presented through traditional language games, such as memory games, flashcards, and Kahoot!. They were generally disengaged when asked to complete extra exercises and often displayed disappointment when assigned homework for subsequent classes.

In contrast, students in the experimental group were notably more motivated and engaged. The use of different interactive tools greatly enhanced their participation during the lessons. The interactive presentation of materials and the incorporation of educational applications were particularly appealing to them. They asked numerous questions and were highly focused on their class activities. Vocabulary learning through applications such as Kahoot!, Quizizz, Wordwall, Quizlet, and others was their preferred method of study. Similarly, grammar instruction became engaging and enjoyable when facilitated through different apps and websites. It was observed that by the end of the experimental process, students in the experimental group demonstrated significantly greater vocabulary knowledge and a better understanding of grammar compared to their peers in the control group.

Therefore, speaking skills were significantly more developed in the experimental group. Compared to the control group, students in the experimental group felt more comfortable answering questions and frequently used English to communicate both with us and with their peers. These students consistently demonstrated that they were well-prepared for classes. Moreover, completing additional tasks assigned as homework was not a problem for them. They actively participated in material presentations and often expressed a desire to create extra projects on their own initiative.

The observed differences in behavior between the two groups helped us understand the importance of new technologies for students. It became evident that foreign language teaching and learning processes are less effective without the application of ICTs.

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Conclusion

This paper focuses on the role of new technologies in enhancing foreign language (FL) skills among primary school students. The findings of the study indicate that teaching and learning with new technologies is statistically more effective than traditional teaching methods. Students who were taught using various ICT tools achieved higher results compared to those taught using traditional methods. Additionally, it was observed that the inclusions of new technologies is essential to meet the needs of modern students. Given these findings, we strongly believe that implementing new technologies into foreign language education is not only beneficial but necessary for achieving effective learning outcomes.

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Conflicts of Interest: The author declares no conflict of interest.

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