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Applying computer technologies in teaching a foreign language

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ABSTRACT

The article under discussion depicts the role of computer technologies in teaching foreign languages by developing the language competence and communicative skills of learners. The research studies the usage of digital instruments including software applications in learning foreign languages, mobile applications and virtual platforms to create interactive and personalized classes. The research examines the educational advantages emerging in the process of combining multimedia elements with the artificial intelligence systems to raise students' participation and enhance access to classes. Besides, the article discusses the problems including lack of the teachers' digital skills which prevent integration of the educational technologies into a teaching process. The research results demonstrate how computer technologies changed the way of the international communication as well as methods of foreign languages teaching.

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Chet tillarni o‘qitishda kompyuter texnologiyalarini qo‘llash

Kalit so‘zlar:
kompyuter texnologiyalar,
afzalliklar,
o‘quv jarayoni,
faoliyat,
o‘qitish usullari,
malakalar,
integratsiya,
mobil ilovalar,
virtual platformalar.

ANNOTATSIYA

Ushbu maqolada talabalarning til kompetensiyasi va muloqot qobiliyatlarini rivojlantirish orqali chet tillarini o‘rgatishda kompyuter texnologiyalarining roli o‘rganiladi. Tadqiqotda interaktiv va individuallashtirilgan darslarni yaratish uchun raqamli vositalar, jumladan, til o‘rganish dasturiy ilovalari, mobil ilovalar va virtual platformalardan foydalanish tahlil qilinadi. Ta’limda talabalarni faoliyatini oshirish va darslarga kirish imkoniyatlarini kengaytirish maqsadida multimedia elementlarini sun’iy intellekt tizimlari

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bilan birlashtirish jarayonida yuzaga keladigan ta’lim afzalliklari ko‘rib chiqiladi. Bundan tashqari, maqolada ta’lim texnologiyalarini o‘qitish jarayoniga integratsiyalashuviga to‘sqinlik qiluvchi muammolar, jumladan, o‘qituvchilarning raqamli ko‘nikmalari yo‘qligi muhokama qilinadi. Tadqiqot natijalari kompyuter texnologiyalarining xalqaro muloqot usullarini va xorijiy tillarni o‘qitish metodlarini qanday o‘zgartirgani haqida ma’lumot beradi.

Применение компьютерных технологий в преподавании иностранного языка

Ключевые слова:
компьютерные технологии,
преимущества,
учебный процесс,
активность,
методы преподавания,
навыки,
интеграция,
мобильные приложения,
виртуальные платформы.

АННОТАЦИЯ

В данной статье рассматривается роль компьютерных технологий в обучении иностранному языку путем развития языковой компетенции и коммуникативных навыков учащихся. В исследовании изучается использование цифровых инструментов, включая программные приложения для изучения иностранного языка, мобильные приложения и виртуальные платформы для создания интерактивных и персонализированных занятий. Рассматриваются образовательные преимущества, возникающие в процессе сочетания мультимедийных элементов с системами искусственного интеллекта для повышения активности студентов и расширения доступа к занятиям. Кроме того, в статье рассматриваются проблемы, в том числе недостаток цифровых навыков у преподавателей, которые препятствуют интеграции образовательных технологий в учебный процесс. Результаты исследования демонстрируют, как компьютерные технологии изменили способ международного общения, а также методы преподавания иностранных языков.

INTRODUCTION

The introduction of computer technologies into English language education has transformed traditional teaching methodologies, empowering educators with innovative tools to improve considerably the language acquisition process. The remarkably common global adoption of English as a standard for academic, professional and intercultural communication has considerably increased the demand for many modern teaching methods. Technology assist considerably the education, changing the way students learn by offering dynamic, customized experiences with content, teachers and classmates, according to M. Warschauer [8]. Advanced digital tools play a fundamental part in developing student engagement which leads to better educational results.

The important strength of computer technologies lies in their capacity to provide personalized learning experiences smoothly incorporating self-directed learning methodologies. Mobile-assisted language learning (MALL) is an exceptionally popular and highly effective method for teaching English, considerably assisting students in

acquiring vocabulary, grammar and pronunciation through the use of mobile devices and a collection of engaging games and virtual platforms. G.Stockwell [7] shows how mobile technology lets learners access important language practice anytime, anywhere, allowing daily practice and consistent engagement with their learning goals. Targeted feedback, increasing students' ability to tackle specific weaknesses and improve their performance, is offered by modern artificial intelligence approaches and adaptive learning systems.

An important number of interactive multimedia tools, such as videos, podcasts and simulated exercises, demonstrably improve students' communicative competence. Many highly effective interactive English learning tools expose students to an important number of the natural language settings and a large variety of the authentic cultural contexts needed for a complete comprehension of key English language subtleties. C. Chapelle [3] suggests that computer applications can aid student's learning and these applications offer several opportunities for important interactions which improve second language acquisition. Many students use virtual reality (VR) and augmented reality (AR) platforms to practise their conversational skills in safe, simulated environments.

Integrating computer technologies into the English language education offers many advantages, but educators encounter different challenges in implementing them effectively. Improper teacher technology skills are a big challenge in their teaching practice. Teachers who need proper training should learn how to integrate technological tools properly within their instruction methods for developing student-focused interactive lessons. R. Hampel and U. Stickler [5] found that online language tutors require several specific skills, including the creation of interactive tasks, the management of virtual environments and the provision of rapid feedback. Digital technology remains unavailable particularly in areas lacking digital infrastructure. The lack of the sufficient internet access prevents the implementation of innovative educational practices, worsening existing educational inequalities.

Digital technology's development is extraordinarily rapid. This makes it exceedingly challenging for the educational institutions to change. Strong AI, advanced machine learning and the natural language processing hold outstanding potential for the education development. Effective use of them in the educational institutions requires careful planning, sufficient resources and thorough evaluation. These experimental tools won't reach their full potential if used improperly.

The investigation digs into the multidimensional effect of computer technologies on a foreign language instruction, exploring both their pedagogical potential and the natural limitations imposed by the educational environment. This research examines current practices and future trends. It develops a thorough framework depicting the effects of digital resources on many future English instruction methods. We focus on developing multiple solutions to technology adoption challenges so teachers and learners can make the most of these innovations.

This study helps teachers, school leaders and researchers discuss how digital technology can be used in the educational system by offering useful advice. This research targets to improve considerably the digital English language education. It will achieve this by promoting large empowerment and innovation and by thoroughly evaluating the technical aspects and challenges involved.

METHOD OF RESEARCH

This research into optimizing computer-assisted instruction for foreign language acquisition, focusing specifically on English, uses a strong mixed-methods methodology. This study employs both qualitative and quantitative methodologies to explore thoroughly the important role of digital tools in language education, examining their large strengths and large weaknesses. J. Creswell and V. Plano Clark [4] consider that mixed methods research allows researchers to combine qualitative data along with quantitative data. This combination results in a deeper comprehension of many complex educational issues. This research method uses an advanced hybrid approach, combining a strict quantitative evaluation of measurable technology adoption along with a thorough qualitative analysis to understand educator and learner experiences.

Participants

The study included two separate groups of participants: teachers of English and students. Fifty experienced teachers from Fergana city's secondary schools (#2 and #10) and higher educational institutions (Fergana State university and Fergana Polytechnic Institute) took part, all skilled in using digital teaching methods. Many teachers demonstrated varying levels of digital expertise, from beginner to advanced skills. This study included 300 students aged 15 to 25. The students' English skills varied. Some students were beginners, others intermediate and some advanced. To study thoroughly technology tools' effects on classroom success in multiple subjects, researchers needed a diverse group of participants because differing perspectives were important for a thorough analysis.

Data collection

Student surveys, teachers' interviews and classroom observations, a multidimensional approach to data collection, guaranteed thorough data gathering.

Surveys: Student and teacher questionnaires yielded large quantitative data. This study used surveys to assess participants' attitudes toward, frequency of application, views on the effectiveness and any technical difficulties of computer technology. R. Johnson and L. Turner [6] discovered that surveys provided a cost-effective way to gather wide-ranging data on participants' beliefs, behaviors and experiences.

Interviews: Twenty teachers in total, shared their detailed perspectives on integrating technology into classroom teaching during wide-ranging interviews conducted by researchers. Research on technology in the English language teaching revealed both advantages and disadvantages of digital tools.

Classroom Observations: Researchers observed English language classrooms using digital tools like interactive whiteboards, online learning platforms and mobile apps. The method provided several readily understandable pieces of information about how the educational technologies improved teaching and student learning.

The research, drawing on a diverse body of the secondary sources including academic studies, institutional reports and detailed case studies, illuminated larger trends in computer-assisted language learning (CALL).

Data analysis

The research systematically analyzed both quantitative and qualitative data.

Quantitative analysis: Researchers used statistical software to analyze many survey data points, calculating statistics such as the mean, median and standard deviation and they performed several inferential statistical methods, including

correlations and t-tests. Thorough data analysis revealed the precise frequency of student device use in relation to their academic performance.

Qualitative analysis: The study employed a strict thematic analysis, as described by V. Braun and V.C larke, to analyze thoroughly all interview and classroom observation data. The researchers analyzed their data in three steps: categorizing the data, identifying frequent patterns and interpreting the relationship between those patterns and their research questions. V. Braun and V. Clarke's [2] method helps researchers identify recurring themes in qualitative data. This method provides a systematic and flexible approach to understanding these themes.

Research tools

This study investigated many computer tools and it specifically examined their applications in the English language instruction.

- Mobile Applications: This research compared Duolingo, Quizlet and Memrise to see how well these popular language-learning apps help users meet their goals, such as learning vocabulary, grammar and pronunciation.
- Online Learning Platforms: This analysis examined Google Classroom and Moodle, two major online learning platforms, to determine how these tools improve several aspects of class collaboration and assignment management.
- Interactive Media: Thorough research showed how videos, podcasts and gamified simulations create engaging learning experiences for students.
- Emerging Technologies: This study examined the ways AI chatbots and VR/AR technologies improve communication and intercultural skills development in a foreign language learning. M. Warschauer [8] argues that digital tools are most effective in education when teachers choose tools fitting both the learning goals and student needs.

Ethical considerations

The research in the examination upheld high moral standards. Every participant got one written notice explaining the research purpose, procedures and expected rewards. Each participant's enrollment in the study was characterized by written consent. Every data storage operation was conducted under strict confidentiality protection, while anonymity safeguards all personal participant identities for the duration of the study. Participants possessed complete autonomy to withdraw from the study at any point without experiencing any negative consequences. The study received full approval from the institutional review board.

Significance of the methodology

This study uses a mixed-methods approach for a thorough investigation of the research area. By combining quantitative analysis and qualitative data gathering, researchers gain a complete comprehension of computer technology's effect on the English language education. Using multiple data collection methods – at least three surveys, several interviews, two classroom observations and secondary research – improves the validity and reliability of the results. This framework offers clear guidance on effective use of the digital tools in language teaching. It helps educators, researchers and policymakers.

Table 1 presents the main computer technologies. These technologies are used to teach foreign languages. This makes their important features and uses much easier to understand, so it's much simpler to see how each technology helps people learn a foreign language.

Table 1.

Comparison of computer technologies by features and applications

Technology type	Examples	Primary features	Application in language teaching
Gamified learning apps	Duolingo, Memrise	Gamification, progress tracking, Srewards	Vocabulary building, grammar practice, motivation enhancement
AI-driven platforms	Rosetta Stone, Busuu	Individualized learning, feedback	Speech practice, individualized lessons
Virtual classrooms	Zoom, Microsoft Teams	Live interaction, visual sharing, mini sessions	Simultaneous teaching, group discussions, acting out
Virtual reality (VR)	Mondly VR, Immerse	Immersive environments, interactive simulations	Cultural immersion, conversational practice
Language exchange tools	Tandem, HelloTalk	Peer-to-peer interaction, native speaker engagement	Real-time conversation, cultural exchange

This comparative analysis empowers educators to reach well-educated decisions regarding the educational technologies, skillfully changing their selection of tools to adjust with specific pedagogical objectives, student demographics and the special contextual factors of their learning environments.

RESEARCH RESULTS

Studies show that using computers in English classes helps considerably students study. Technology helps students learn better by increasing their interest and improving their language skills, allowing for independent learning. This study identified three key areas. These areas include digital platforms in teaching, teacher challenges in adopting technology, in addition to technology's effect on teaching methods.

Effectiveness of Digital Tools

Data showed that students and teachers found digital learning tools improved language learning. This was a positive finding. Survey results show that using Duolingo and Quizlet improved student skills. A large majority, 85%, showed large improvement in vocabulary and grammar. Highly interactive video content helped considerably students in achieving a substantially improved comprehension of spoken English, leading to a 78% satisfaction rate. C. Chapelle [3] strongly believes that digital tools promote exceptionally authentic language learning environments important for the large development of communication skills. Modern classroom technology stresses practical language learning. This approach results in considerably improved student knowledge retention.

VR and AR technologies proved to make language learning environments easier. Virtual reality conversational simulations helped students speak more fluently, showing a 25% improvement over traditional teaching. Research findings confirm M. Warschauer's [8] conclusions that engaging technologies allow many learners to develop several language skills in authentic settings to increase their fluency and expertise, as well as using these technologies creates many authentic interactions that improve learning along with a foreign language mastery.

Google Classroom and Moodle help teachers manage courses better and these platforms also help students collaborate more effectively. Instructors found these platforms much better for sharing materials, giving quick feedback and helping students interact more, which improved language learning a lot. R. Hampel and U. Stickler [5] consider that virtual learning environments offer students strong opportunities for meaningful communication, a key element in the second language acquisition. The considerably improved collaborative features of these platforms encourage many strong classroom communities wherein learners acquire a large amount of knowledge directly from instructors and their peers, thereby improving educational engagement and encouraging heightened interest.

Challenges in technology adoption

Research data strongly suggests that improvements in a foreign language learning are considerably driven by computer technology, notwithstanding the large methodological hurdles overcome in this study. An important number of teachers experienced challenges stemming from inadequate digital literacy skills. Many educators experienced difficulty developing lessons that used technology effectively and managing the several online tools necessary for teaching. R. Hampel and U. Stickler [5] found that technology in teaching needs special skills, like knowing digital tools and making interactive lessons. This means the educational institutions need good training programs to help teachers learn to use technology.

Users in underserved education regions faced meaningful problems due to major differences in available technology. Many students had trouble using language learning technology because they lacked reliable internet access and enough devices. Stockwell says an important digital divide is a major obstacle blocking technology from fully helping language education. Unequal access to technology social barriers and this obstructs technical progress and exacerbates educational inequality. Schools and higher educational institutions need to find practical ways to make sure all students have the digital tools and resources they need to learn.

Many students found many digital language learning tools confusing. Therefore, clearer instructions are necessary to help students select the best tool. Effective technology use in teaching depends on selecting appropriate tools adjusted with specific learning objectives, as C. Chapelle noted [3]. Many students become confused and disengaged when they lack guidance on choosing the right learning tools and how to use them effectively.

Implications for teaching practices

The research strongly indicates an important need for targeted training resources to improve educators' skills in using digital technologies. Effective teaching methods using these tools improve learning. R. Hampel and U. Stickler [5] believe quality teacher training programs are key to developing educators skills in using technology for better student learning. Sufficient teacher training on developing digital skills improves the efficiency of the educational institutions. This enables educators to integrate computers into the classroom more effectively.

This research shows that the educational institutions necessitate tactically created plans to address infrastructure shortcomings and guarantee equitable technical access for all involved parties. Closing the digital divide requires government and the educational institutions to improve internet access, provide affordable computers and

offer online learning assistance. Sufficient access to a large quantity of technology is necessary for the educational technology to function effectively, says M. Warschauer [8]. Every student deserves equal accessibility to thorough electronic resources for a substantially more all-embracing education.

Highly advanced AI-powered adaptive learning platforms offer a considerably compelling solution, as they precisely direct specific content to meet the diverse and highly specific learning requirements of many individual learners with exceptionally large effectiveness. The research shows that analytic tools which personalize learning materials can help students learn better. Adaptive educational tools personalize learning, providing students with immediate feedback for self-paced study. Adaptive technologies help educators create learning experiences for students of all backgrounds.

The study shows that effective integration of computer technologies considerably improves English language acquisition, leading to better academic performance. Educators' extraordinarily thorough professional development and sustained, continuing training are absolutely important for the complete realization of these benefits and equally important are ample student access to technology and carefully planned solutions to address potential problems in their studies. The educational institutions must solve these problems. This will maximize technology's potential for creating dynamic learning spaces that improve the language education.

Here is the Table 2 generated based on the findings discussed in the "Research Results" section:

Table 2.

Effectiveness of digital tools in enhancing English language skills

Digital tool/technology	Impact on language skills	Percentage of students reporting improvement	Key benefits
Duolingo, Quizlet	Vocabulary, Grammar	85%	Interactive exercises, enhances vocabulary retention.
Interactive video content	Comprehension of spoken English	78%	Enhances comprehension and listening skills.
Virtual reality (VR)	Oral fluency	25%	Simulates real-life conversations, increases fluency.
Augmented reality (AR)	Oral fluency	25%	Creates immersive language experiences, boosts confidence.
Google classroom	Collaboration, writing	75%	Streamlines course management, supports peer collaboration.
Moodle	Reading, listening, writing	70%	Offers multimedia resources, improves comprehension.
AI-driven adaptive learning tools	Personalized learning	Variable (depends on learner's progress)	Adjusts content to individual needs, supports self-paced learning.

Table 2 above provides an overview of the effectiveness of various digital tools in the English language teaching and their impact on specific language skills.

CONCLUSION

This research shows that computer technologies improve considerably a foreign language instruction, promoting active student engagement, cultivating learner autonomy and yielding improved demonstrably fluency. Many digital learning tools, such as many mobile apps and several online platforms, enable teachers to create flexible classrooms that accommodate diverse languages and cultures. We believe that technology affects education by increasing student collaboration and it also leads to the use of authentic language materials.

Research data indicates that integrating computer technologies into the English language teaching considerably improves four important aspects of a foreign language acquisition: vocabulary and grammar, pronunciation and communication skills. The study reveals several important challenges: insufficient teacher training, uneven resource allocation across all institutions and a need for improved methods to identify effective research tools. The analytically important barriers identified strongly underscore the important need for precisely targeted professional development strategies, coupled with large institutional technical investments, together with equitable digital resource access for each and every learner.

Artificial intelligence-powered adaptive learning tools improve personalized language instruction, according to the study. These technologies change individual learners. They do this by using customized learning materials. Automatic feedback from these materials promises to transform traditional teaching methods. This will go beyond a standardized instruction.

The English language education thrives with the aid of computer technologies; however, fully harnessing their potential necessitates continuing teacher training, a strong professional development and a resolute commitment to bridging the digital divide. Policymakers, researchers and educators must collaborate. This collaboration is necessary to use technology fully for developing effective, innovative and all-embracing language teaching methods in the constantly evolving digital landscape. Dealing with the research's many issues will improve learners' technical skills. This improved skill set, coupled with improved language and cultural understanding, is important for success in our globally connected digital world.

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