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MAKTABGACHA
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- 13.00.00 Pedagogika fanlari
- 13.00.01 Pedagogika nazariyasi. Pedagogik ta'limotlar tarixi
- 13.00.02 Ta'lim va tarbiya nazariyasi va metodikasi (sohalar bo'yicha)
- 13.00.03 Maxsus pedagogika
- 13.00.04 Jismoniy tarbiya va sport mashg'ulotlari nazariyasi va metodikasi
- 13.00.05 Kasb-hunar ta'limi nazariyasi va metodikasi
- 13.00.06 Elektron ta'lim nazariyasi va metodikasi (ta'lim sohaları va bosqichlari bo'yicha)
- 13.00.07 Ta'limda menejment
- 13.00.08 Maktabgacha ta'lim va tarbiya nazariyasi va metodikasi
- 13.00.09 Ijtimoiy pedagogika
- 07.00.00 Tarix fanlari
- 19.00.00 Psixologiya fanlari
- 01.00.00 Fizika-matematika fanlari
- 02.00.00 Kimyo fanlari
- 03.00.00 Biologiya fanlari
- 09.00.00 Falsafa fanlari
- 10.00.00 Filologiya fanlari
- 11.00.00 Geografiya fanlari

M

AKTABGACHA VA AKTAB TA'LIMI

Pedagogika, psixologiya fanlariga ixtisoslashgan ilmiy jurnal



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DIDACTIC POSSIBILITIES OF TEACHING ENGLISH IN PRIMARY SCHOOLS BASED ON 3D INTERACTIVE TECHNOLOGIES

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Abstract: This study explores the didactic opportunities presented by 3D interactive technologies in the teaching of English in primary schools. Drawing on theoretical insights and empirical studies from both international and Uzbek researchers, this paper analyzes how 3D technologies can support vocabulary development, listening comprehension, and speaking skills through multisensory engagement.

Key words: 3D interactive technologies, English language teaching, primary education, didactic opportunities, digital pedagogy.

Annotatsiya: Mazkur tadqiqotda boshlang'ich maktablarda ingliz tilini o'qitishda 3D interaktiv texnologiyalarning didaktik imkoniyatlari o'rganiladi. Xalqaro va o'zbek olimlarining nazariy qarashlari hamda empirik tadqiqotlariga tayangan holda, ushbu maqolada 3D texnologiyalarning so'z boyligini rivojlantirish, tinglab tushunish va og'zaki nutq ko'nikmalarini ko'p sezgi asosida shakllantirishdagi roli tahlil qilinadi.

Kalit so'zlar: 3D interaktiv texnologiyalar, ingliz tilini o'qitish, boshlang'ich ta'lim, didaktik imkoniyatlar, raqamli pedagogika.

Аннотация: В данном исследовании рассматриваются дидактические возможности, предоставляемые 3D-интерактивными технологиями в обучении английскому языку в начальных школах. Основываясь на теоретических выводах и эмпирических исследованиях как зарубежных, так и узбекских ученых, в статье анализируется, как 3D-технологии способствуют развитию словарного запаса, пониманию на слух и навыкам устной речи за счёт многосенсорного восприятия.

Ключевые слова: 3D-интерактивные технологии, обучение английскому языку, начальное образование, дидактические возможности, цифровая педагогика.

INTRODUCTION

In recent decades, education has undergone a transformative shift from traditional pedagogical methods to technology-enhanced learning environments. Among the various digital tools now available to educators, 3D interactive technologies have emerged as one of the most promising innovations in primary education. Their capacity to create immersive, visually rich, and interactive experiences opens new frontiers in the teaching and learning process, particularly in language education.

Young learners, especially in primary school, benefit significantly from multisensory and experiential learning. English, as a foreign language, often presents challenges in terms of vocabulary acquisition, pronunciation, and usage due to its abstract nature and differences from learners' native languages. Traditional classroom methods that rely heavily on rote memorization and textbook-based instruction often fail to engage young learners or provide sufficient contextualization for effective language acquisition ^[5]. In contrast, 3D interactive technologies allow students to experience English in simulated real-life scenarios, making the learning process more intuitive and meaningful. With the development of digital infrastructure and the growing availability of educational software, many schools around the world—including those in Uzbekistan—are beginning to integrate such technologies into their curricula. These tools support not only language development but also cognitive growth, creativity, and learner autonomy. As students interact with 3D environments, they develop linguistic competence through exploration, repetition, and contextualized usage.

LITERATURE REVIEW

The integration of 3D interactive technologies into primary English language teaching is supported by an expanding body of educational research that emphasizes the effectiveness of immersive and multisensory learning environments. These technologies create dynamic learning spaces where students engage with language in contextually rich, visually stimulating settings that enhance both cognitive and linguistic development. Milrad argues that mobile and interactive technologies, such as 3D environments, allow learners to immerse themselves in realistic language contexts, which promotes deeper cognitive engagement and long-term retention ^[6]. Al-Azawi, Al-Faliti, and Al-Blushi further emphasize that 3D virtual environments support gamified learning experiences, increasing both motivation and engagement—critical components in language acquisition for young learners ^[1].

Research by Mayer on multimedia learning highlights the synergy between verbal and visual information. According to his theory, presenting language input through both visual simulations and spoken words enhances comprehension and memory retention ^[5]. This theoretical perspective underscores the educational value of 3D technologies, which combine visual, auditory, and kinesthetic stimuli. Uzbek scholars also contribute significantly to the discourse. Khakimov notes that 3D learning tools align well with the goals of Uzbekistan's competency-based education reforms. He emphasizes that such technologies develop not only linguistic abilities but also critical thinking and creativity in young learners ^[3]. Yuldashev highlights the practical applications of 3D tools in Uzbek primary schools, reporting improved student engagement and vocabulary retention during English lessons ^[9].

Collectively, these studies affirm that 3D interactive technologies are not merely supplemental tools but transformative pedagogical instruments. They facilitate experiential learning, contextual understanding, and active participation—all essential for primary learners acquiring a foreign language. Furthermore, the synergy between international research and Uzbek educational initiatives demonstrates a global and local convergence in the pursuit of effective technology-enhanced language education.

RESULTS AND DISCUSSION

3D environments offer visual and interactive representations of vocabulary, allowing students to associate words with concrete images. This aligns with Paivio's dual coding theory, which posits that information is better retained when presented in both verbal and visual formats. For example, 3D flashcards or immersive storytelling can help students understand and recall vocabulary more effectively ^[7].

In 3D simulations, learners engage with dialogues and sounds in contextualized scenarios, enhancing their listening comprehension. Auditory input combined with visual interaction strengthens linguistic processing among young learners ^[9]. Virtual role-playing in 3D classrooms enables learners to practice conversational English in safe, simulated environments. These technologies foster communication, reduce speaking anxiety, and build learner confidence. As Warschauer and Healey ^[8] note, computer-assisted language learning, including 3D tools, facilitates communicative practice in realistic contexts. Gamified 3D environments make learning enjoyable. Students are more motivated when interacting with digital characters and exploring engaging storylines. According to Lin and Lan ^[4], student-centered 3D virtual learning boosts intrinsic motivation and promotes learner autonomy. While 3D tools offer considerable benefits, their integration requires both technical and pedagogical expertise. Teachers must be trained to utilize these tools effectively. As Karimova ^[2] emphasizes, professional development is essential for the successful implementation of digital learning platforms.

CONCLUSION

3D interactive technologies present significant didactic opportunities for enhancing English language instruction in primary education. Their multisensory and immersive nature supports vocabulary acquisition, listening and speaking skills, and learner motivation. By situating language in authentic and visually rich environments, 3D tools offer young learners meaningful, contextualized experiences often absent in traditional instruction.

Moreover, these technologies align well with current pedagogical approaches that prioritize student-centered learning, collaborative tasks, and personalized instruction. When integrated thoughtfully and strategically, 3D interactive technologies not only complement but also enrich existing curricula. They foster learner autonomy, cognitive engagement, and sustained motivation—factors essential for effective language acquisition at the primary level.



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- 13.00.00 Pedagogika fanlari
 - 13.00.01 Pedagogika nazariyasi. Pedagogik ta'limotlar tarixi
 - 13.00.02 Ta'lim va tarbiya nazariyasi va metodikasi (sohalar bo'yicha)
 - 13.00.03 Maxsus pedagogika
 - 13.00.04 Jismoniy tarbiya va sport mashg'ulotlari nazariyasi va metodikasi
 - 13.00.05 Kasb-hunar ta'limi nazariyasi va metodikasi
 - 13.00.06 Elektron ta'lim nazariyasi va metodikasi (ta'lim sohaları va bosqichlari bo'yicha)
 - 13.00.07 Ta'limda menejment
 - 13.00.08 Maktabgacha ta'lim va tarbiya nazariyasi va metodikasi
 - 13.00.09 Ijtimoiy pedagogika
 - 07.00.00 Tarix fanlari
 - 19.00.00 Psixologiya fanlari
 - 01.00.00 Fizika-matematika fanlari
 - 02.00.00 Kimyo fanlari
 - 03.00.00 Biologiya fanlari
 - 09.00.00 Falsafa fanlari
 - 10.00.00 Filologiya fanlari
 - 11.00.00 Geografiya fanlari



MAKTABGACHA VA MAKTAB TA'LIMI

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