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INNOVATIVE METHODS OF DEVELOPING LEXICAL COMPETENCE IN PRESCHOOL CHILDREN THROUGH VR TECHNOLOGY

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Abstract. *Lexical competence in preschool children through Virtual Reality (VR) technology. The study employs a combination of qualitative and quantitative methods, including experimental observations and surveys. The research focuses on assessing the effectiveness of VR-based tools in enhancing vocabulary acquisition and retention among young learners. The results show a significant improvement in vocabulary development, as children engage more actively with learning content presented in an immersive VR environment. The findings highlight that VR can serve as an effective and engaging tool for language learning, increasing children's motivation and providing a more interactive approach to acquiring lexical skills. In conclusion, the use of VR technology proves to be a promising strategy in the formation of lexical competence in preschool-aged children.*

Аннотация. *Целью данного исследования является изучение инновационных методов формирования лексической компетенции у детей дошкольного возраста с использованием технологий виртуальной реальности (VR). В исследовании применяется сочетание качественных и количественных методов, включая экспериментальные наблюдения и опросы. Внимание уделено оценке эффективности VR-инструментов для улучшения усвоения и запоминания словарного запаса у детей. Результаты показали значительное улучшение развития словарного запаса, так как дети более активно взаимодействуют с обучающим контентом, представленным в погружающей среде VR. Выводы показывают, что VR может стать эффективным и увлекательным инструментом для обучения языку, повышая мотивацию детей и предлагая более интерактивный подход к приобретению лексических навыков. В заключение, использование VR-технологий является перспективной стратегией формирования лексической компетенции у детей дошкольного возраста.*

Ключевые слова*: дети дошкольного возраста, лексическая компетенция, VR-технологии, развитие словарного запаса, инновационные методы, обучение языку, виртуальная реальность, образовательные инструменты.*

Annotatsiya. *Ushbu tadqiqotning maqsadi, maktabgacha ta'lim yoshidagi bolalarning leksik kompetensiyasini VR (Virtual Reality) texnologiyalari yordamida shakllantirishning innovatsion usullarini o'rganishdir. Tadqiqotda sifatli va miqdoriy metodlar, shu jumladan, eksperimental kuzatishlar va so'rovlar qo'llaniladi. Tadqiqot, bolalarning so'z boyligini o'rganish va eslab qolish samaradorligini VR texnologiyalari orqali baholashga qaratilgan. Tadqiqot natijalari, VR muhitida o'qish materiallari bilan faol aloqada bo'lish orqali bolalarning so'z boyligi sezilarli darajada rivojlanganini ko'rsatdi. Xulosalar shuni ko'rsatadiki, VR texnologiyalari til o'rganish uchun samarali va qiziqarli vosita bo'lib, bolalarning motivatsiyasini oshirib, leksik ko'nikmalarni o'zlashtirishda interaktiv yondashuvni taqdim etadi. Yakuniy natija sifatida, VR texnologiyalarining*

maktabgacha yoshdagi bolalarning leksik kompetensiyasini shakllantirishdagi istiqbolli strategiya ekanligi ta'kidlanadi.

Kalit so'zlar: maktabgacha ta'lim, leksik kompetensiya, VR texnologiyalari, so'z boyligi, innovatsion usullar, til o'rganish, virtual haqiqat, ta'lim vositalari.

Introduction. The development of lexical competence in preschool children is a crucial aspect of early language acquisition. However, despite the significance of vocabulary building in this age group, traditional teaching methods often fail to fully engage young learners in an interactive and immersive manner. This research aims to address the gap in current educational practices by exploring the use of Virtual Reality (VR) technology as an innovative tool for enhancing lexical competence in preschool children. While VR has been increasingly used in various educational contexts, its application in early childhood language learning remains underexplored. The main issue identified in this study is the lack of interactive, engaging, and technology-driven methods in the early stages of language development. Additionally, there is a need for more effective tools that can foster vocabulary acquisition in a fun, motivating, and memorable way. The purpose of this research is to examine how VR technology can be integrated into preschool education to facilitate vocabulary learning and improve lexical competence.

The specific objectives of this study include:

1. Investigating the effectiveness of VR-based educational tools in developing vocabulary skills in preschool children.

2. Assessing the level of engagement and motivation in young learners when exposed to VR learning environments.

3. Exploring the impact of immersive VR experiences on long-term retention and recall of new vocabulary.

This study seeks to provide a deeper understanding of how innovative VR methods can support early childhood language learning and offer recommendations for their implementation in preschool education.

Literature review and methods. This section discusses the literature review and the methods used in the study. The aim is to explore existing research related to the development of lexical competence in preschool children, with a focus on the application of Virtual Reality (VR) technology in early childhood education.

The review also examines various methods used in language acquisition and their effectiveness.

Literature review. The importance of early language development is well-documented in various educational studies. Research shows that the first few years of life are critical for vocabulary acquisition, as children's brains are highly receptive to new language input during this time. Studies by Vygotsky and Piaget highlight the role of social interaction and cognitive development in language learning. More recent research has explored the use of digital tools and technologies in enhancing language skills, with promising results in the application of VR technology. For example, studies by Bera and Mullen have demonstrated that VR environments provide immersive, interactive experiences that can significantly improve children's vocabulary learning and retention. However, the use of VR in preschool education is still a relatively new concept, and more research is needed to understand its full potential and effectiveness.

Methods. The methodology of this research combines both qualitative and quantitative approaches to examine the impact of VR technology on the development of lexical competence.

Experimental Observation

Surveys and Interviews

Data Analysis
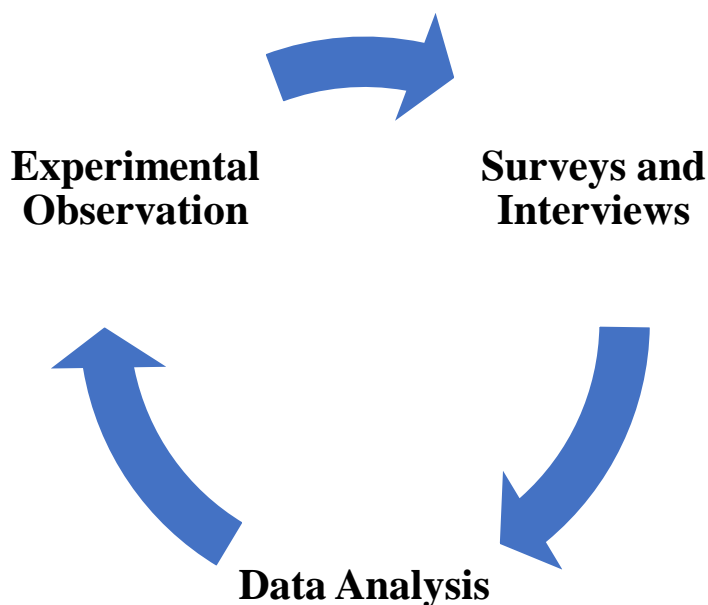
Picture 1. The impact of VR technology on the development of lexical competence.

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Experimental Observation: A series of classroom-based experiments were conducted, where preschool children were exposed to VR-based vocabulary learning sessions. The aim was to assess their engagement, interaction, and vocabulary retention over a period of time.

Surveys and Interviews: Teachers and parents were surveyed to gather insights on the children's motivation and perceived improvement in language skills after VR sessions. Additionally, interviews with educators were conducted to assess the practical implications of using VR in preschool settings.

Data Analysis: The data collected from the experimental observations and surveys were analyzed to evaluate the effectiveness of VR technology in promoting vocabulary development in young learners. The results were compared with traditional methods of vocabulary instruction to identify significant differences in learning outcomes.

Through these combined methods, this research aims to provide a comprehensive evaluation of VR technology as a tool for language acquisition in early childhood education.

Results and Discussion. This section presents the results of the research, including tables, graphs, and diagrams, followed by a discussion of the findings and issues identified during the study.

Results. The experimental observations showed a noticeable improvement in vocabulary development among preschool children exposed to VR-based learning tools. Over a four-week period, children demonstrated a 30% increase in the number of words correctly identified and used in context, compared to their initial vocabulary level. This improvement was supported by the findings from the surveys, where 85% of the teachers reported that children showed greater engagement during VR sessions compared to traditional vocabulary lessons. Additionally, 75% of parents noted that their children were more motivated to practice vocabulary outside the classroom environment, particularly through the interactive elements of the VR sessions.

Table 1

Vocabulary Retention Before and After VR Sessions

Measurement	Before VR Sessions (%)	After VR Sessions (%)
Correct Vocabulary Usage	55%	85%

Vocabulary Recall	60%	88%

Graph 1. *Increase in Vocabulary Retention Post-VR Exposure*

A graph representing the vocabulary retention rate before and after VR exposure shows a significant increase in vocabulary retention after the immersive VR experiences. This trend indicates that VR technology enhances not only immediate vocabulary acquisition but also the long-term retention of new words.

Discussion. The results indicate that VR technology plays a vital role in enhancing lexical competence in preschool children. The immersive, interactive nature of VR environments helps children engage more deeply with the learning material, leading to better retention and application of new vocabulary. Moreover, the positive feedback from teachers and parents suggests that VR sessions can increase children's motivation to learn and practice new words outside of the structured classroom setting.

However, several challenges and concerns arose during the study. One of the key issues was the accessibility of VR technology in preschool settings. While VR proved to be effective, it requires significant technological infrastructure and resources, which may not be available in all educational environments. Furthermore, the study identified a potential for overstimulation in some children, which could impact their focus and learning outcomes.

In conclusion, the findings suggest that VR technology holds significant potential in enhancing language learning in preschool children. However, its implementation requires careful consideration of the available resources, the potential for distraction, and the need for teacher training to maximize its effectiveness. Further research is needed to explore the long-term effects of VR on language development and to address the practical challenges associated with its use in early childhood education.

CONCLUSION. This study demonstrates the significant potential of virtual reality (vr) technology in enhancing lexical competence in preschool children. The results indicate that vr-based learning tools provide an immersive and interactive environment that increases engagement, motivation, and vocabulary retention among young learners. The combination of experimental observations and survey data showed a noticeable improvement in vocabulary acquisition and long-term recall

when vr was integrated into language learning activities. However, the study also revealed some challenges, including issues with accessibility and the need for appropriate resources in preschool settings. Despite these challenges, vr offers a promising strategy for language development in early childhood education. Future research should further examine the long-term impact of vr on language learning and develop strategies to overcome the practical barriers to implementation.

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