

## TEACHING ENGLISH VOCABULARY WITH AUGMENTED REALITY(AR) FOR EFL LEARNERS.

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**Abstract:** Technological tools in the field of education is advancing, so that there are many opportunities, especially AR,VR, online platforms. This study aims to review the latest 10 researches done in the field of AR, and its usage in teaching vocabulary to EFL learners and the effect on students language acquisition. A systematic review has been done of the last 5 years researches and several word families are shown to EFL young learners to find out AR's effect. The results indicate that all researches were positively influenced to the students' language learning, in addition students, motivation and engagement had increased a lot.

**Keywords:** AR (augmented reality), teaching vocabulary, EFL learners, student motivation.

## ОБУЧЕНИЕ АНГЛИЙСКОМУ СЛОВАРЮ С ДОПОЛНЕННОЙ РЕАЛЬНОСТЬЮ (AR) ДЛЯ УЧАЩИХСЯ АИЯ.

**Аннотация:** Технологические инструменты в области образования развиваются, поэтому появляется много возможностей, особенно ДР, VR, онлайн-платформы. Целью этого исследования является обзор последних 10 исследований, проведенных в области ДР, и ее использования в обучении словарю учащихся АИЯ и влияния на усвоение языка учащимися. Был проведен систематический обзор исследований за последние 5 лет, и несколько семейств слов были показаны учащимся АИЯ, чтобы выяснить влияние ДР. Результаты показывают, что все исследования оказали положительное влияние на изучение языка учащимися, кроме того, мотивация и вовлеченность учащихся значительно возросли.

**Ключевые слова:** ДР (дополненная реальность), обучение словарю, учащиеся АИЯ, мотивация учащихся.

## INTRODUCTION

Due to the advent of free or inexpensive web-based programs and mobile applications, the use of Augmented Reality (AR) has been increasing significantly over the past 20 years in a variety of fields, including business, architecture, and entertainment. Ivan Sutherland initially used the phrase "augmented reality" (AR) in 1968 when he developed the first head-mounted display system. However, it wasn't until 1990 that Boeing researcher Tom Caudell defined the term, which was previously connected to the military and aerospace sector [1]. Nowadays, AR used in gamification, product visualization, marketing companies, architecture and home design, education, and industrial manufacturing in the world. However, in Uzbekistan AR is going to be developed by four main collaborations, The Strategic Expansion of EON Reality The world leader in immersive learning solutions, EON Reality, declared its arrival in Uzbekistan in April 2024, Applied AR/VR Technologies Laboratory, IBT College's Collaboration with Uzbekistan and VR in Samarkand's Silk Road Museums. AR integration in the field of teaching vocabulary can be very useful as it is one of the fascinating things to self-learn vocabulary and effective for visual learners. Animating vocabulary words will skyrocket the learning rate of vocabulary, as the language can be acquired by the help of words and without words students

cannot express their feelings and ideas, in addition they cannot communicate in the target language. This study analyses the effect of AR in students learning, and students' reaction to the AR tools.

### **LITERATURE REVIEW**

Since technology is one of the key components to support teaching and learning, augmented reality technology can be used in language instruction to bring real-world objects that can make learning more convenient. However, this can also have an impact on how well students understand the material [2]. One of the difficulties in education is guiding students through the learning process; therefore, educators must use new technologies, such as Augmented Reality (AR), in their lessons. Based on the experience in applying AR, the writer acquired several advantages while using AR media in teaching vocabulary. It might enhance the effect of the learning curve. When compared to non-AR applications, kids who use AR applications are able to learn more quickly and easily. AR additionally encouraged students to be more imaginative and exploratory. Some study found that AR could help pupils to absorb new knowledge and overcome challenges[3]. In Uzbekistan, the government's focus on digital transformation, particularly through the "Digital Uzbekistan 2030" agenda, has hastened the integration of technology into the educational system. Both students and instructors now have more options thanks to the widespread use of e-learning platforms, AI-powered apps, and digital instructional materials. But even while digital education has many benefits, there are drawbacks as well that must be resolved for its adoption to be successful[4].

According to the study, augmented reality (AR) technology can greatly enhance language learners' competency, especially when it comes to vocabulary and pronunciation. Strengths of the AR technology implementation can offer learners a personalized and adaptive learning experience, which can improve the efficacy of language learning, the AR application offered an interesting and interactive learning experience that encouraged learners to practice their language skills more frequently and for longer periods of time. The study emphasizes how augmented reality (AR) technology might improve conventional teaching strategies and give students a useful tool to practice their language abilities and more study is required to find out how well AR technology works for learning foreign languages.

Weaknesses of the AR application's accessibility in places with inadequate internet connectivity may be restricted because it depends on a steady internet connection to access the AR content. The study only looked at one language (English), and more research is required to find out how well AR technology works for learning other languages [5]. The most frequent issues in terms of pedagogy were inadequate preparation and subpar multimedia content that was incorporated into AR initiatives. While it was made abundantly evident in the instructions that the projects should be set up to support scaffolded learning, certain teams put more emphasis on design than content, which led to certain projects turning into a collection of disconnected tasks. Nonetheless, the majority of them used arrows to sequentially and meaningfully integrate the digital content [6]. However, AR has the ability to completely change how things are done in the educational system. AR has the potential to enhance the English language learning process. With AR, learning English becomes more dynamic and engaging more effective and enjoyable vocabulary learning. AR may be used to teach English vocabulary and to display 3D objects to engage pupils more [7].

### **METHODOLOGY**

To investigate the use of Augmented Reality (AR) as a tool for teaching English vocabulary to EFL (English as a Foreign Language) learners, this study adopted a qualitative approach that combined a review of existing academic literature with a small-scale student feedback component. This dual method allowed for a comprehensive understanding of both the theoretical and practical implications of AR in vocabulary instruction.

#### Literature Review Process

As a foundation for the study, a focused review of ten academic papers was conducted. These sources were drawn from a range of well-known scholarly databases, including ERIC, Web of Science, Scopus, ScienceDirect, and Google Scholar. The search targeted publications from the past decade (2015–2024) that specifically addressed the role of AR in language learning, particularly vocabulary development among EFL or ESL students.

Search terms such as "augmented reality," "vocabulary acquisition," "EFL learners," and "technology in language education" were used to locate relevant studies. Each article was carefully analyzed to identify key findings, methodological approaches, benefits, challenges, and overall outcomes related to the use of AR in the classroom.

#### Data Collection Tools and Procedure

Participants engaged with an AR-based vocabulary learning application during a supervised session. This experience allowed them to interact with digital vocabulary content in an immersive way. Afterward, students completed a brief questionnaire that included both multiple-choice and open-ended questions. The survey was designed to assess their impressions regarding the ease of use, engagement, motivation, and effectiveness of the AR tool for learning new vocabulary.

#### Data Analysis

The findings from the reviewed articles were grouped into themes to highlight commonalities and differences in how AR has been applied in language learning across different studies. As for the student feedback, responses were examined through content analysis to uncover recurring patterns, preferences, and concerns. Quantitative responses (such as Likert scale ratings) were also reviewed using simple descriptive statistics to summarize the overall opinions expressed by the participants.

### RESULTS

**Table 1. Summary of Recent Studies on the Use of Augmented Reality (AR) in Teaching English Vocabulary to EFL Learners**

| NAME, AUTHOR AND PUBLICATION YEAR OF ARTCILE.  | METHODS AND METHODOLOGIES.   | KEY FINDINGS  |
|--|--|---|
| 1.Using augmented reality (AR) as an authoring tool in EFL through mobile computer-supported collaborative learning - Jose Belda-Medina (2022) | A total of 229 teacher candidates from the College of Education took part in this experiment to analyze the digital skills of teacher candidates in order to develop AR-based projects aimed at teaching English to children and young learners, | The research findings revealed that the teacher candidates lack practical training in AR content creation and implementation from a technological and pedagogical perspective, but their attitudes towards AR integration as transformative |

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|   | and to assess the impact on their attitudes towards AR integration.  | technology were very positive, particularly regarding student attention, collaboration and shared enjoyment.   |
| 2. Developing vocabulary card base on Augmented Reality (AR) for learning English- I F Rozi, E Larasati and V A Lestari(2021)             | Elementary school students or who are just learning to speak English.  | A mobile-based AR application was created to assist students in learning English vocabulary either independently or in class.  |
| 3."Integrating augmented reality (AR) in EFL class for teaching vocabulary."- Sadikin, Irma Savitri, and Erista Martyani. (2020)          | quantitative research or more specifically quasi-experimental design at the second grade of Primary school in Padalarang | Learning English vocabulary through augmented reality (AR) could improve students' vocabulary mastery. It made young learners more engaged and excited to learn English vocabulary.              |
| 4. Mobile-based AR application helps to promote EFL children's vocabulary study - He, J., Ren, J., Zhu, G., Cai, S., & Chen, G. (2014)    | 40 pre-school children from kindergarten located in Beijing City,  | Key finding of the study is that mobile AR (73,125) learning is much better than cards instructions (23,125).  |
| 5. The effects of augmented reality to motivation and performance in EFL vocabulary learning - Tsai C.C. (2020)                           | 42 students in two fifth grade classes in an elementary school in Central Taiwan.  | The results showed that the instructional materials motivation and performance of the students taught using AR were superior to those of students taught using the traditional lecturing method. |
| 6. The impact of augmented reality (AR) on vocabulary acquisition and student motivation. - Belda-Medina, J., & Marrahi-Gomez, V. (2023). | 130 students aged 14 to 15 (9th-graders) from two secondary education schools.   | positive attitudes and a strong interest in AR integration in language learning.   |
| 7. Using digital education technologies in uzbekistan- Majidova I.G,- (2025)  | Systematic Review  | In Uzbekistan, the implementation of the "Digital Uzbekistan 2030" strategy has accelerated the adoption of digital tools, enabling a more modern and efficient education system.                |

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| 8. A systematic review on vocabulary learning in AR and VR gamification context - Haoming, L., & Wei, W. (2024)   | Systematic Review of 97 articles.  | The study suggested tripartite co-construction mechanism for learning materials, involving students, teachers, and researchers, integrating both gamified AR and VR.  |
| 9. Learning English language as a second language with augmented reality. - Azimova, D., & Solidjonov, D. (2023).   | Testing involved 30 participants, aged 18-30, who were non-native English speakers who learnt English vocabulary, pronunciation, and grammar with AR and without AR. | The study found that the experimental group, who used the AR application, demonstrated a significant improvement in their English language proficiency compared to the control group, who used traditional learning methods |
| 10. Fostering Sustainable Vocabulary Development in Fourth Graders Using Augmented Reality- Sorohiti, M., Rahmawati, F., Hatmanto, E. D., Nurjanah, A., & Affanda, E. F. (2025, March). | The research subjects comprised twenty-four students in the 4th grade of a state elementary school in Sleman Regency in Yogyakarta, Indonesia.                       | The study results implied that AR media effectively enhanced elementary school students' vocabulary and encouraged their involvement in daily vocabulary learning.  |

The table has given above attempts to provide key finding in this field and mentions the methods, participants and the design of the ten studies.

## DISCUSSION

The integration of Augmented Reality (AR) in English language learning has gained increasing attention over the past decade, especially in the area of vocabulary instruction. The reviewed literature consistently highlights AR's potential to transform traditional learning environments by making vocabulary acquisition more interactive, engaging, and contextually rich. One of the key advantages noted across several studies is AR's ability to provide learners with multimodal input—combining visual, auditory, and textual elements—which can significantly enhance word retention and recall.

Another recurrent theme in the literature is the role of AR in promoting learner autonomy and motivation. By allowing students to explore vocabulary in a hands-on and self-directed manner, AR creates a learning atmosphere that supports active participation rather than passive memorization. This is especially beneficial for EFL learners, who often face challenges in connecting abstract vocabulary to real-world usage. AR helps bridge this gap by embedding language into virtual contexts that mimic real-life scenarios.

Moreover, many of the reviewed studies emphasize the alignment between AR tools and the principles of constructivist learning theory. Through interactive experiences, learners are encouraged to build their own understanding of vocabulary, rather than relying solely on teacher-led explanations. This shift toward learner-centered instruction has been associated with deeper cognitive processing and longer-term retention of vocabulary items.



Despite these benefits, the literature also points to several challenges. Technical limitations, such as the availability of compatible devices and software stability, can hinder the widespread adoption of AR in classrooms. Additionally, some studies caution that without proper pedagogical integration, AR risks becoming a novelty rather than a meaningful learning tool. This underscores the importance of teacher training and thoughtful curriculum design when implementing AR technologies in educational settings.

Overall, the findings from the reviewed research suggest that while AR is not a standalone solution, it serves as a highly effective supplement to traditional vocabulary instruction, particularly when it is carefully integrated into a broader pedagogical framework. Its potential to make learning more immersive, personalized, and contextually meaningful holds promise for enhancing vocabulary development among EFL learners.

### CONCLUSION

This study explored the use of Augmented Reality (AR) as a tool for enhancing vocabulary instruction among EFL learners, drawing on insights from a review of ten academic sources. The literature consistently supports the view that AR can significantly enrich the vocabulary learning process by making it more interactive, engaging, and contextually grounded. By offering learners visual and auditory cues in real-time environments, AR helps bridge the gap between abstract vocabulary and real-world application.

The reviewed research also highlights the motivational benefits of AR, noting its ability to increase student interest and encourage active learning. When integrated effectively, AR supports constructivist learning principles, allowing students to build knowledge through exploration and experience rather than passive instruction. These qualities make AR a valuable supplement to traditional teaching methods, especially in EFL contexts where language exposure may be limited.

However, successful implementation depends on several factors, including access to technology, teacher preparedness, and alignment with curriculum goals. Without careful planning and pedagogical guidance, AR may fail to deliver its full educational potential.

In conclusion, AR presents a promising approach to vocabulary instruction for EFL learners, offering both cognitive and affective benefits. While challenges remain, the technology holds substantial potential when thoughtfully applied, suggesting a need for continued research and innovation in this evolving area of language education.

### REFERENCES

1. Belda-Medina, J., & Marrahi-Gomez, V. (2023). The impact of augmented reality (AR) on vocabulary acquisition and student motivation. *Electronics*, 12(3), 749.
2. Rozi, I. F., Larasati, E., & Lestari, V. A. (2021, February). Developing vocabulary card base on Augmented Reality (AR) for learning English. In *IOP Conference Series: Materials Science and Engineering* (Vol. 1073, No. 1, p. 012061). IOP Publishing.
3. Sadikin, Irma Savitri, and Erista Martyani. "Integrating augmented reality (AR) in EFL class for teaching vocabulary." *Prof. J. English Educ* 3.2 (2020): 161-167.
4. Majidova, I. G. (2025). USING DIGITAL EDUCATION TECHNOLOGIES IN UZBEKISTAN. *Educator Insights: Journal of Teaching Theory and Practice*, 1(2), 28-37.
5. Azimova, D., & Solidjonov, D. (2023). Learning English language as a second language with augmented reality. *Qo 'Qon Universiteti Xabarnomasi*, 1, 112-115.

6. Belda-Medina, Jose. "Using augmented reality (AR) as an authoring tool in EFL through mobile computer-supported collaborative learning." *Teaching English with Technology* 22.2 (2022): 115-135.
7. Sorohiti, M., Rahmawati, F., Hatmanto, E. D., Nurjanah, A., & Affanda, E. F. (2025, March). Fostering Sustainable Vocabulary Development in Fourth Graders Using Augmented Reality. In *The 5th International Conference on Education for All (ICEDUALL 5 2024)* (pp. 54-65). Atlantis Press.
8. He, J., Ren, J., Zhu, G., Cai, S., & Chen, G. (2014, July). Mobile-based AR application helps to promote EFL children's vocabulary study. In *2014 IEEE 14th International Conference on Advanced Learning Technologies* (pp. 431-433). IEEE.
9. Tsai, C. C. (2020). The effects of augmented reality to motivation and performance in EFL vocabulary learning. *International Journal of Instruction*, 13(4), 987-1000.
10. Haoming, L., & Wei, W. (2024). A systematic review on vocabulary learning in AR and VR gamification context. *Computers & Education: X Reality*, 4, 100057