

STUDENT'S PERCEPTION OF USING AUGMENTED REALITY IN INNOVATIVE TECHNOLOGY EDUCATION CLASS

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Abstrak

Penelitian ini bertujuan untuk mengeksplorasi persepsi mahasiswa Pendidikan Bahasa Inggris Universitas Muhammadiyah Muara Bungo terhadap penggunaan Augmented Reality (AR) dalam mata kuliah *Innovative Technology Education*. AR dipandang sebagai teknologi inovatif yang mampu meningkatkan motivasi, keterlibatan, serta pemahaman terhadap konsep abstrak. Metode penelitian yang digunakan adalah kualitatif dengan wawancara mendalam semi-terstruktur melalui telepon dan analisis tematik, berdasarkan kerangka teori *Instructional Design* (Merrill, Smith & Ragan). Partisipan penelitian terdiri dari dua mahasiswa semester empat yang dipilih secara *purposive sampling*. Hasil penelitian menunjukkan adanya persepsi positif, seperti kemampuan AR memvisualisasikan konsep abstrak, meningkatkan motivasi belajar, serta mendorong kreativitas dan pembelajaran mandiri. Namun, ditemukan pula persepsi negatif berupa kendala teknis, keterbatasan akses, serta rasa kurang percaya diri untuk menggunakan AR di luar kelas. Kesimpulannya, AR berpotensi mendukung keterlibatan dan pemahaman mahasiswa, tetapi optimalisasi penggunaannya memerlukan dukungan infrastruktur, pelatihan guru, dan ketersediaan sumber daya yang memadai. harus hati-hati agar tidak menggantikan kemandirian dan kreativitas mahasiswa.

Kata Kunci : Augmented Reality, persepsi mahasiswa, pembelajaran inovatif

Abstract

This research aimed to explore English Education students' perceptions at Muhammadiyah University of Muara Bungo regarding the use of Augmented Reality (AR) in the Innovative Technology Education course. AR is considered an innovative tool that can enhance motivation, engagement, and understanding of abstract concepts. A qualitative method was employed using semi-structured telephone interviews and thematic analysis framed by Merrill, Smith, and Ragan's Instructional Design theory. The participants were two fourth-semester students selected through purposive sampling. The findings revealed positive perceptions, including AR's ability to visualize abstract concepts, increase learning motivation, and foster creativity and independent learning. However, negative perceptions were also identified, such as technical issues, limited access, and lack of confidence

in applying AR outside the classroom. In conclusion, AR has potential to improve student engagement and comprehension, yet its effective use requires adequate infrastructure, teacher training, and accessible resources.

Keywords : *Augmented Reality, students' perception, innovative learning*

INTRODUCTION

The rapid development of digital technology has introduced various innovations in education, one of which is Augmented Reality (AR). This technology integrates virtual objects into the real world, creating interactive, contextual, and engaging learning experiences. In English language learning, AR is considered to enhance motivation, engagement, and comprehension of abstract concepts. Previous studies have shown that AR can improve vocabulary acquisition (Shaumiwaty et al., 2022), increase students' learning motivation (Wardani & Turahmat, 2024), and support active participation in learning activities (Ismayatim et al., 2019). However, other studies also highlight challenges such as limited infrastructure, lack of teacher training, and pedagogical issues that need to be addressed (Fahmi et al., 2024).th enthusiasm and debate.

Alongside the development of Innovative Learning Technology (ILT), AR is positioned as a key educational tool for the future, capable of meeting the needs of digital-based learning. ILT encompasses digital applications, online platforms, and multimedia

approaches designed to foster student-centered learning. Within English language learning, ILT has been shown to support vocabulary retention, communicative competence, and meaningful engagement (Basri et al., 2020). This aligns with Tomlinson and Masuhara's (2004) argument that effective language learning involves not only linguistic mastery but also meaningful communication, memory activation, and learner creativity.

Despite its potential, the implementation of AR in Indonesian education remains limited. Barriers include infrastructural constraints, the relatively high cost of devices, insufficient teacher digital literacy, and resistance to changes in traditional teaching practices (Garzón et al., 2019). This gap highlights a mismatch between technological opportunities and the readiness of human resources and educational institutions. At the same time, the Indonesian government has encouraged digital integration through the national curriculum and teacher training programs, which signals the urgency of preparing future educators to utilize innovative learning technologies.

Findings from previous studies also reflect mixed results. For example, Hafizah et al. (2024) developed the *Snake and Ladder Augmented Reality* (SLAR) learning media for science education at the elementary level and discovered that AR facilitated better understanding of abstract concepts. In contrast, Fahmi et al. (2024), who employed the Technology Acceptance Model (TAM), revealed that teachers' perceptions of ease of use and usefulness strongly influenced their willingness to adopt AR. These findings suggest that the success of AR implementation depends not only on the technology itself but also on the readiness and acceptance of its users, both teachers and students.

In the context of language education, AR provides opportunities to visualize materials that are often difficult to convey through text or 2D images alone. Vocabulary introduction, sentence structures, and even conversational simulations can be enriched with 3D objects and audio features. Consequently, AR not only supports visual learners but also accommodates auditory and kinesthetic learning styles (Rajput et al., 2024). This multidimensional learning potential makes AR highly relevant in English classrooms, where student motivation and comprehension of abstract content often present challenges.

Nevertheless, limited research has specifically examined the perceptions of English Education students at the higher education level regarding AR. This is particularly important since university students, as future educators, will play a central role in integrating innovative technologies into classroom practice. Their perceptions shape the degree to which AR will be accepted, utilized, and developed as part of instructional strategies in the future. Thus, exploring students' perceptions not only captures their learning experiences but also reflects their readiness to embrace digital transformation in education.

Therefore, this study focuses on exploring the perceptions of English Education students at Muhammadiyah University of Muara Bungo toward the use of AR in the *Innovative Technology Education* course. The research employs a qualitative approach to capture both positive and negative perceptions based on students' direct experiences of using AR as a learning tool. The focus is placed on identifying how AR supports engagement, motivation, and comprehension, while also addressing technical and pedagogical challenges that emerge during the learning process.

By investigating students' perceptions, this study aims to provide practical contributions to the development

of innovative learning media, particularly within English language education. Furthermore, the findings are expected to enrich the academic discourse on AR integration in higher education and offer valuable insights for educators, media developers, and policymakers in designing effective technology-based learning strategies.

RESEARCH METHOD

This study employed a qualitative descriptive design with a thematic analysis approach. A qualitative design was considered appropriate because the aim of the research was to explore students' perceptions of using Augmented Reality (AR) in English language learning, which required an in-depth understanding of subjective experiences rather than numerical measurement (Creswell, 2012). The descriptive approach allowed the researcher to present students' perspectives in detail, while thematic analysis helped in identifying recurring patterns and categories within the data (Braun & Clarke, 2006).

The research was conducted at Muhammadiyah University of Muara Bungo, specifically in the English Education Study Program. This institution was selected because it provided direct access to students who were actively engaged in the *Innovative Technology Education* course that utilized AR as part of its learning activities. The research took

place during the 2024/2025 academic year, ensuring that the data collected reflected current practices and students' authentic experiences with the integration of AR in their learning process.

The population of this study consisted of fourth-semester students enrolled in the English Education Study Program. From this population, two students were selected using purposive sampling. This technique was applied to ensure that the participants had direct and relevant experience with the use of AR in their learning process. As stated by Sugiyono (2017), purposive sampling is effective in qualitative research when the researcher needs to focus on participants who can provide rich information aligned with the research objectives.

Data were collected through semi-structured interviews, which allowed for flexibility in exploring students' perceptions while still maintaining focus on predetermined themes. The main research instrument was an interview protocol developed based on Merrill's First Principles of Instruction and Smith & Ragan's Instructional Design Theory. These frameworks ensured that the questions addressed both the instructional and pedagogical aspects of integrating AR in English language learning. Semi-structured interviews are widely recommended in

qualitative studies as they provide depth and allow participants to elaborate on their experiences (Cohen, Manion, & Morrison, 2018).

The collected data were analyzed using thematic analysis following Braun and Clarke's six-step framework. The process involved familiarization with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the final report. To enhance rigor and credibility, the researcher applied theory triangulation and engaged in consultation with the academic supervisor. This process ensured validity, transparency, and reliability in interpreting the findings (Woolf & Silver, 2018).

FINDINGS AND DISCUSSION

A. Findings

The data analysis from semi-structured interviews with two fourth-semester English Education students revealed a variety of perceptions regarding the use of Augmented Reality (AR) in the *Innovative Technology Education* course. Using thematic analysis, the researcher identified two broad categories: positive perceptions, which highlighted the benefits of AR in English language learning, and negative perceptions, which emphasized the challenges and limitations. Within these categories, several subthemes

emerged, namely visualization of abstract concepts, motivation and engagement, creativity and independent learning, technical difficulties, limited access, and lack of confidence in application.

The first major finding concerned visualization of abstract concepts. Both participants agreed that AR was helpful in making abstract materials easier to understand. One student explained, *"When I see the 3D objects, it feels more real, and I can connect it with the lesson better than only reading the text."* This perception indicated that AR supported comprehension by bridging the gap between theory and practice.

The second subtheme was motivation and engagement. Students emphasized that AR made the classroom atmosphere more enjoyable and interactive. They reported feeling more eager to join the activities because AR provided a new and exciting learning experience. As expressed by one participant, *"Learning with AR is not boring; it makes me want to pay more attention in class."*

A further positive perception was related to creativity and independent learning. Students reported that AR encouraged them to explore beyond the classroom,

stimulating curiosity and self-directed study. One participant stated, *“I try to use AR outside class to practice, and it makes me think more creatively about how to learn English.”*

Despite these positive views, students also reported several negative perceptions. The first was technical difficulties. Both participants mentioned unstable internet connection and device limitations as barriers to using AR effectively. One noted, *“Sometimes the AR app doesn’t run smoothly because of the signal, and it disturbs the learning.”*

Another subtheme was limited access. Students explained that not all devices were compatible with AR applications, which created inequality in participation. They felt that AR required resources not always available to all learners.

Finally, the theme of lack of confidence in application emerged. Students admitted that although AR was useful in class, they felt less confident to apply it independently outside the structured learning environment. One participant reflected, *“I am not sure how to use AR by myself without the teacher’s guidance.”*

In conclusion, the findings showed that students perceived AR as an innovative and motivating tool that improved visualization, engagement, and creativity. However, they also highlighted significant barriers such as technical problems, limited access, and lack of confidence, reflecting both the opportunities and challenges of integrating AR in English language learning.

B. Discussion

The findings indicate that AR was largely perceived as beneficial in supporting English learning, particularly in the visualization of abstract concepts. This aligns with previous studies showing that AR helps students better understand abstract or difficult content by presenting it in a more concrete and interactive form (Hafizah et al., 2024). Students’ comments that 3D objects made learning “more real” demonstrate how AR bridges the gap between theory and practice, making abstract English materials easier to comprehend. This role of AR resonates with Mayer’s Cognitive Theory of Multimedia Learning, which highlights that learning improves when verbal and visual representations are integrated (Mayer, 2009).

The role of AR in increasing motivation and engagement reflects its potential as a powerful pedagogical tool. By making lessons more interactive and enjoyable, AR encouraged students to participate more actively during class. This finding is consistent with Wardani & Turahmat (2024), who found that AR raised students' enthusiasm and interest in language learning. The interactive nature of AR aligns with Vygotsky's Social Constructivist Theory, which emphasizes that active participation and social interaction promote deeper learning.

Another significant outcome was related to creativity and independent learning. Students reported that AR stimulated them to explore materials outside the classroom and encouraged creative thinking in how they approached English learning. This finding supports Tomlinson & Masuhara (2004), who argue that effective language learning is not only about linguistic knowledge but also about developing learners' creativity and autonomy. AR, therefore, acted as a catalyst for self-directed learning, giving students new ways to experiment with language and technology.

However, the negative perceptions also highlight important pedagogical and infrastructural concerns. The first challenge was technical difficulties, such as unstable internet connections and application errors, which sometimes disrupted the learning process. This finding echoes Garzón et al. (2019), who noted that technological readiness including stable connectivity and compatible devices is essential for successful AR implementation. Without reliable infrastructure, the benefits of AR cannot be fully realized.

The theme of limited access also requires attention. Students explained that not all devices supported AR applications, creating unequal opportunities to use the technology. This limitation reflects broader concerns about the digital divide in education, where access to technological resources shapes the quality of learning experiences (Fahmi et al., 2024). Unless institutions provide adequate support, the use of AR risks reinforcing inequality among learners.

Another issue that emerged was lack of confidence in applying AR independently. Although students found AR helpful during class,

they were hesitant to use it outside of teacher guidance. This indicates a need for scaffolding and training to ensure that students are not only passive users but also confident and competent in applying AR in different contexts. This finding aligns with Smith & Ragan's Instructional Design framework, which stresses the importance of structured support in fostering learner independence.

Taken together, these results suggest that AR functions effectively as a supplementary learning tool, but not as a standalone solution. Its strengths lie in visualizing content, enhancing motivation, and stimulating creativity, while its weaknesses highlight the risks of technical barriers, limited access, and low learner autonomy.

The uniqueness of this study lies in capturing student perceptions within the context of an Indonesian English Education program. Unlike studies focused solely on AR's impact on performance, this research sheds light on how future teachers negotiate both benefits and drawbacks of AR, reflecting the complexity of integrating innovative technology into higher education.

From a pedagogical perspective, the findings emphasize the need for educators and institutions to design strategies that support responsible and effective AR integration. Teachers can position AR as an engaging tool to complement instruction, while also fostering critical thinking, independence, and digital literacy among students. Institutional support in the form of training and infrastructure is equally vital to ensure sustainability.

In conclusion, the discussion illustrates that while AR is valued for enhancing visualization, motivation, and creativity, its limitations cannot be overlooked. The challenge for educators and institutions is to integrate AR responsibly, balancing technological innovation with the cultivation of independent, confident, and resourceful learners who are prepared to utilize technology in future teaching practices.

CONCLUSION

This study concludes that Augmented Reality (AR) is perceived by English Education students at Muhammadiyah University of Muara Bungo as a useful and innovative tool that enhances understanding of abstract concepts, increases motivation, and supports creativity in

learning, while at the same time presenting challenges such as technical difficulties, limited device access, and lack of confidence in independent use; therefore, the integration of AR in higher education requires adequate infrastructure, proper training, and appropriate pedagogical strategies to maximize its benefits and ensure sustainable implementation in English language learning.

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