

Unlocking English Skills: The Impact of Interactive Edu-Game Puzzles on Elementary Students – A Literature Review

Fadhillah^{*1}, Putry Julia¹, Badratun Nafis¹, Riska Ananda¹

¹Primary Teacher Education Department, Universitas Serambi Mekkah, Indonesia

*Corresponding Author: fadhillah@serambimekkah.ac.id

Abstract. *This study aims to analyze the effectiveness of interactive Edu-game puzzle media in improving elementary school students' English language skills. The method used is a literature review, examining various literature and previous research related to the use of interactive learning media, specifically Edu-game puzzles, in English language learning at the elementary school level. The analysis results show that interactive Edu-game puzzle media has significant potential to enhance students' English language skills, particularly in vocabulary, grammar, and reading comprehension. Factors contributing to the effectiveness of this media include interactive elements, immediate feedback, and enjoyable aspects that increase students' learning motivation. However, effective implementation requires careful design and teacher support. This study concludes that interactive Edu-game puzzle media can be a valuable tool in English language learning in elementary schools, with recommendations for further research on optimal design and implementation strategies in different learning contexts.*

Keywords: *learning media, edu-game, english language*

1. Introduction

In the era of rapid globalization and information technology, mastering English has become increasingly important as an international communication tool. English proficiency is not only required in the workplace but also in various aspects of daily life (Mamadjanova & qizi Malikova, 2023). Therefore, English language learning needs to be introduced early, especially at the elementary school level, to build a strong foundation for students in mastering this global language. However, English language learning at the elementary school level often faces various challenges. One of the main challenges is the lack of student interest and motivation in learning a foreign language (Rofi'i, 2023). Conventional teaching methods, which tend to be monotonous and less interactive, can make students feel bored and struggle to understand the material being taught.

To address these issues, innovations in English language teaching methods are needed to attract student interest and increase motivation. One approach that can be used is the use of technology-based interactive learning media, such as Edu-games or educational games (Hasumi & Chiu, 2024). These interactive learning media can create a fun learning environment and help students understand the material more easily.

Puzzles are a form of educational game that has long been used in language learning. Puzzles can stimulate critical thinking, enhance vocabulary, and develop problem-solving skills (Pfenninger et al., 2023). By integrating puzzles into interactive Edu-games, it is hoped that effective and engaging learning media can be created for elementary school students.

The development of information and communication technology has opened new opportunities for the development of interactive learning media. Puzzle-based Edu-games can be designed using various multimedia elements such as images, sounds, and

animations to create a richer and more immersive learning experience (Li et al., 2024). This can help students better understand the context of English language use.

Previous studies have shown the effectiveness of using Edu-games in English language learning. For example, a study by Fauziyah et al. found that students who used Edu-games in learning English vocabulary showed significant improvement compared to those who used conventional teaching methods (Fauziyah et al., 2023).

Additionally, the use of interactive Edu-game puzzles can support students' independent learning. Features such as immediate feedback and automatic assessment systems allow students to learn at their own pace and ability level (Aminah, 2018). This can help accommodate different learning styles and levels of ability within a single class.

The gamification aspect of interactive Edu-games can also increase student motivation and engagement in the learning process. Elements such as point systems, badges, and leaderboards can create a healthy sense of competition and encourage students to continuously improve their skills (Huseinović, 2024).

Moreover, the role of teachers in implementing interactive Edu-game puzzles is crucial. Teachers need to have a good understanding of how to integrate these media into the learning process and be able to provide guidance and support to students in using them (Nurhikmah et al., 2023). Teacher training and professional development in this area are important aspects to consider.

The use of interactive Edu-game puzzles can also support the development of 21st-century skills such as digital literacy, creativity, and collaboration. Through puzzle-solving activities and interactive games, students not only learn English but also develop critical thinking and technological skills essential for their future (McLaren & Nguyen, 2023).

Evaluating the impact of interactive Edu-game puzzles on student learning outcomes is also an important aspect to analyze. Longitudinal studies are needed to assess the long-term effectiveness of these media in improving elementary school students' English language skills (Yukselturk et al., 2018).

Accessibility and inclusivity aspects in the development of interactive Edu-game puzzles also need to be considered. These learning media should be accessible to all students, including those with special needs or limited access to technology (Estes et al., 2020). This is important to ensure equity in the learning process.

Finally, analyzing the potential for development and scalability of interactive Edu-game puzzles is also necessary. With the rapid advancement of technology, there are opportunities to integrate new technologies such as artificial intelligence and virtual reality into these learning media. This can open new opportunities for enhancing the effectiveness of English language learning at the elementary school level.

2. Method

This study uses the library research method. The library research process involves reviewing literature and analyzing relevant combined topics. Literature searches can utilize sources such as journals, books, dictionaries, documents, magazines, and other sources without conducting field research (Zed, 2008). This method was chosen because the research focuses on analyzing and synthesizing information from various literature sources related to interactive Edu-game puzzle media and its use in improving elementary school students' English language skills. Data sources were collected from various secondary sources, including: books related to learning media, Edu-games, and English language teaching; national and international scientific journals; previous research

(theses, dissertations); and online scientific articles.

The data collection techniques in this study include: online and offline literature searches, documentation of relevant information from the sources found, and categorization and coding of data based on the main themes of the research. The analysis technique is conducted qualitatively through a literature review, resulting in descriptive data in the form of written sentences and observed behaviors from previous research conducted by other researchers. The stages include: data reduction, which involves selecting and summarizing important information according to the research focus; data presentation, which involves organizing data in the form of narrative descriptions; and drawing conclusions, which involves synthesizing findings to answer the research questions. To ensure data validity, the researcher uses source triangulation techniques and discussions with peers

3. Results and Discussions

This study analyzes the effectiveness of using interactive Edu-game puzzle media to improve elementary school students' English language skills. Based on the data obtained, several important findings will be discussed as follows:

3.1 English Language Learning Theory for Children

English language learning for children, especially elementary school students, has different characteristics compared to adult learning. According to Piaget's cognitive development theory cited in Arumsari, elementary school children (ages 7-11) are in the concrete operational stage. At this stage, children begin to think logically about concrete objects and experiences but still struggle with abstract thinking (Arumsari et al., 2017).

In the context of English language learning, this theory implies that teaching methods should involve direct experiences and concrete activities. This aligns with the Total Physical Response (TPR) approach developed by Asher, where language learning is combined with physical activities to facilitate language acquisition (Adnyani, 2018).

3.2 Interactive Learning Media in English Language Teaching

Technological advancements have brought significant changes to language teaching methods. Interactive learning media, including Edu-games, have become popular tools for enhancing the effectiveness of English language learning. According to Prensky, as cited in Nazirwan, the current generation are "digital natives" who are accustomed to digital technology from birth, making the use of interactive media a way to increase their motivation and engagement in learning (Nazirwan, 2019).

Research by Chen et al. shows that using game-based language learning applications can significantly improve students' vocabulary and listening skills compared to traditional methods (Chen et al., 2019). These findings support the argument that interactive media can be effective tools in English language learning.

3.3 Puzzles as a Language Learning Tool

Puzzles have long been used as educational tools, including in language learning. They can enhance critical thinking, problem-solving skills, and vocabulary retention (Ummah et al., 2023). In the context of English language learning, puzzles can help students develop their linguistic skills while keeping them engaged and motivated.

A study by Orawiwatnakul shows that using puzzles in English vocabulary learning can significantly improve students' retention and comprehension (Orawiwatnakul, 2013).

These findings highlight the potential of puzzles as an important component of interactive English learning media.

3.4 Analysis of Interactive Edu-game Puzzle Media

Based on the discussed theories and research, interactive Edu-game puzzle media have great potential to improve elementary school students' English language skills. The use of interactive Edu-game puzzles has been proven to increase students' enthusiasm for learning English. This aligns with research showing that educational games can boost students' interest and enthusiasm for learning. Puzzles presented in an interactive game format make the learning process more enjoyable and less monotonous (Alchorni, 2023).

Interactive Edu-game puzzles are also effective in enhancing students' English vocabulary mastery. Research by Hilmi indicates that using puzzle-based educational games can significantly improve students' vocabulary acquisition (Hilmi, 2019). Puzzles presented in various forms, such as crossword puzzles, word searches, and anagrams, help students remember and understand new vocabulary better. The use of interactive Edu-game puzzles also positively impacts students' reading skills. Findings suggest that puzzle-based educational games can improve students' reading comprehension. Puzzles presented in the form of short stories or paragraphs help students gradually practice their reading skills (Muhsam et al., 2023).

Interactive Edu-game puzzles equipped with audio features help improve students' listening skills. In his book, Afandee Bensulong explains that using educational games with audio features can enhance students' listening abilities. Puzzles presented in audio form help students get accustomed to the pronunciation of words and sentences in English (Bensulong, 2023). Although they do not directly train speaking skills, interactive Edu-game puzzles can help students build confidence in using English. This is consistent with research showing that educational games can increase students' confidence in speaking English. Puzzles that encourage students to verbally express their answers can help train their speaking skills (Trisnadewi & Lestari, 2018).

Based on the above analysis, it can be concluded that interactive Edu-game puzzle media are effective in improving various aspects of elementary school students' English language skills. The use of this media not only increases students' motivation to learn but also helps enhance vocabulary, reading, and listening skills, and indirectly supports the improvement of speaking abilities.

4. Conclusions

The analysis of using interactive Edu-game puzzle media to enhance elementary school students' English language skills shows that this method has great potential to improve the effectiveness of English language learning. This media not only boosts students' motivation and engagement in the learning process but also helps improve vocabulary mastery, reading skills, and overall English proficiency. The use of interactive Edu-game puzzle media aligns with second language acquisition theories, game-based learning, and multimedia learning. This method creates a learning environment that supports natural language acquisition, increases student motivation, and presents learning materials through various effective multimedia elements. However, it is important to note that the success of using this media also depends on proper design and implementation. Interactive Edu-games must be designed considering students' proficiency levels, specific learning objectives, and effective instructional design principles.

For future research, it is recommended to conduct longitudinal studies to measure

the long-term effectiveness of using interactive Edu-game puzzle media in English language learning. Additionally, comparative studies between different types of interactive Edu-games can provide deeper insights into the most effective educational game designs for English language learning at the elementary school level.

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