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Developing a Game-Based Educational Website Using Canva Artificial Intelligence to Teach Reading for Junior High School Students

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Abstract

Reading remains one of the most challenging skills for junior high school students to engage with meaningfully, as conventional reading tasks often fail to sustain their motivation and interest. Despite the growing availability of digital tools, few instructional media have integrated AI-powered platforms specifically to support reading instruction through a game-based approach. This study aimed to develop a game-based educational website using Canva Artificial Intelligence (AI) to teach reading for junior high school students. A Research and Development (R&D) method guided by the ADDIE model (Analyze, Design, Develop, Implement, and Evaluate) was employed. The study involved 10 students from class VII-F for the limited trial and 36 students from class VII-C at one of the junior high schools in Cimahi for the field trial. Data were collected through field notes and two sets of questionnaires: an expert validation sheet and a student response questionnaire. Expert validation yielded a score of 91.25% (Very Good). The limited trial resulted in an 85% positive response, while the field trial produced an 82.01% response rate with a mean student score of 32.81 out of 40. These findings demonstrate that the developed product, *Readventure*, holds strong potential as an engaging and feasible digital medium for strengthening reading instruction at the junior high school level.

Keywords: ADDIE Model; Canva Artificial Intelligence; Educational Website; Game-Based Learning; Reading Skills

INTRODUCTION

Reading is widely regarded as one of the most fundamental skills in English language learning, as it enables learners to access knowledge, expand vocabulary, and develop overall language proficiency. For junior high school students learning English as a Foreign Language (EFL), reading competence is particularly important, given that a significant portion of academic content at this level is delivered through written texts. However, despite its critical role, reading instruction continues to be one of the most challenging areas in EFL classrooms. Many students at the junior high school level struggle to maintain interest in English reading, particularly when tasks involve unfamiliar vocabulary, complex sentence structures or text topics that feel distant from their everyday experiences (Nasrul & Wilymafidini, 2024). This lack of engagement becomes even more problematic when it leads to a passive learning attitude, where students complete reading tasks out of obligation rather than genuine curiosity. A systematic review examining digital reading comprehension instruction across multiple EFL and ESL contexts further emphasized the need for technology-integrated approaches to address these persistent gaps in learner comprehension outcomes (Murphy, 2024).

A central factor contributing to this problem lies in how reading is delivered in the classroom. Conventional reading instruction, which typically involves distributing printed texts and asking

students to answer comprehension questions in a workbook, has been widely criticized for its failure to sustain students' motivation and active participation. In the Indonesian junior high school context, teachers have acknowledged facing persistent challenges in reading instruction, including students' limited motivation, low awareness of reading strategies, and inadequate access to engaging learning resources for a digital era (Rahma et al., 2024). These conditions indicate a pressing need for the development of instructional media that can reframe reading as an active, enjoyable, and technology-supported experience rather than a passive and routine classroom obligation. Research has also demonstrated that digital reading platforms can produce measurable improvements in EFL students' reading comprehension perfomance when implemented as a structured alternative to conventional text-based learning approaches (Dinda et al., 2025).

One approach that has shown considerable promise in addressing disengagement in language learning is game-based learning. By integrating elements such as challenges, rewards, competition, and immediate feedback into the learning process, game-based activities have been consistently found to increase EFL students' motivation and engagement (Huang, 2023). A systematic review examining game-based learning implementation across multiple EFL contexts confirmed that this approach not only raises students' motivation but also contributes to improvements in vocabulary learning and academic results, while simultaneously reducing language anxiety and strengthening student-teacher relationships (Susaniari, 2024). Furthermore, reading engagement, which is closely linked to reading comprehension outcomes, has been found to strengthen when gamified elements such as points, ranks, and collaborative competition are embedded into reading tasks (Matyakhan et al., 2024). A broader systematic review of gamification in education further reinforced that game-based elements can be applied across various educational levels and subject areas to support learners' engagement with material that would otherwise feel abstract or difficult (Zeybek & Saygı, 2024).

Alongside the rise of game-based approaches, artificial intelligence (AI) has increasingly entered the field of education as a transformative force. A mixed-methods study examining AI-mediated language instruction found that it contributed positively to English learning achievement, L2 motivation, and self-regulated learning among EFL learners (Wei, 2023). A comprehensive synthesis of recent reviews further confirmed that AI-enhanced instruction demonstrates strong potential across multiple language skill domains, showing consistent positive effects on learner engagement, achievement, and self-regulation in ESL and EFL contexts (Jeon, 2025). These findings suggest that AI-powered tools, when integrated thoughtfully into language instruction, can go beyond mere content delivery to actively support learners' autonomy and intrinsic drive to engage with language tasks. Notably, a study focused specifically on young EFL learners found that AI-based content generation technology, was effective in enhancing students' reading enjoyment, suggesting that AI tools can serve as meaningful catalyst for developing more positive attitudes toward reading among junior-level learners (Lee et al., 2023). Introducing students to AI-supported learning at the junior high school level is therefore not only pedagogically beneficial but also strategically important, as it helps familiarize young learners with how AI is increasingly shaping daily life and professional environments.

One platform that has gained growing recognition in the field of educational technology is Canva, known for its accessible design interface and increasingly robust AI-powered features. In the context of English language teaching, Canva has been used to create engaging and visually rich learning materials that support differentiated instruction and foster student

creativity (Moro Ramos, 2024). Studies specifically exploring Canva's role in middle school English learning have found that its use positively influenced students' motivation and learning outcomes (Pratama & Hikmat, 2024). Canva's AI features have also been demonstrated to enhance collaborative literacy learning and support student autonomy and engagement in reading and writing activities (Viora et al., 2026). Nevertheless, the majority of existing studies on Canva in language education have concentrated primarily on writing-related tasks, while its potential, particularly when combined with AI features and a game-based format, to specifically support reading instruction remains largely unexplored.

Based on the gap identified above, no study has yet examined how Canva's AI capability can be systematically integrated into a game-based educational website designed specifically to teach reading for junior high school students. Most previous works have addressed game-based learning. AI-assisted tools, and Canva-based media as separate research areas, leaving a significant gap regarding their combined application as a single, cohesive instructional product. This study therefore aims: (1) to develop a game-based educational website using Canva AI to teach reading for junior high school students; (2) to evaluate the feasibility of the developed website through expert validation; and (3) to describe students' responses toward the website following its implementation in a limited and field trial at one of the junior high schools in Cimahi. By combining game-based design. AI-powered features, and website-based delivery into a single product, this study contributes a novel instructional approach that addresses both the motivational and technological gaps identified in current EFL reading instruction.

METHOD

Research Design

This study employed a Research and Development (R&D) approach, as the primary objective was to produce an instructional product rather than merely to test a hypothesis. The development process followed the ADDIE model, which consists of five sequential stages: Analyze, Design, Develop, Implement, and Evaluate (Branch, 2009). This model was selected because each stage offers a clear and systematic procedure, allowing the researcher to identify the performance gap, design an appropriate solution, build the product, try it out with real users, and evaluate its quality based on empirical data. This approach has also been widely applied in the development of technology-based instructional media for EFL classrooms in Indonesia (Gamal, 2022), including the systematic design of English language learning websites aimed at providing more interactive and structured learning experiences (Jurado Soto & Martos Eliche, 2022).

Research Setting and Participants

This study was conducted at one of the junior high schools in Cimahi, involving seventh-grade students as the target users of the developed product. The product, an AI-powered, game-based educational website named *Readventure,* was tried out in two stages. A limited trial was first conducted with 10 students from class VII-F to obtain initial feedback before further refinement. Following revision, a field trial was carried out with 36 students from class VII-C to evaluate the product's feasibility on a wider scale. In addition, two lecturers acted as expert validators to assess the website from the aspects of content quality, language, media design, interactivity, and usability.

Data Collection Technique

Data were collected through two main techniques. First, field notes were used to record classroom observations during the implementation of *Readventure*, particularly regarding students' behavior, engagement, and any technical obstacles encountered while using the website. Second, two sets of closed-ended questionnaires using a four-point Likert scale (1=Poor/Strongly Disagree to 4 = Excellent/Strongly Agree) were distributed: an expert validation questionnaire completed by two validators, and a student response questionnaire completed by the students after using the website in both the limited and field trials.

Procedure

In the Analyze stage, the researcher carried out an initial classroom observation to identify the underlying performance gap related to students' reading skills. The observation revealed that many seventh-grade students displayed low enthusiasm toward English lessons, often perceiving the subject as unimportant and uninteresting compared to other subjects. This indifference was reflected in students' passive behavior during reading activities, in which they tended to treat reading tasks as a routine obligation rather than a meaningful learning experience. These findings confirmed the need for an alternative instructional medium capable of capturing students' interest and reshaping their perception toward English, particularly reading instruction.

In the Design stage, the researcher determined the overall concept and content of the website based on the findings obtained in the previous stage. Five types of game-based activities were designed, namely *Quiz Master, Speed Scan, Jumbled, Word Power, and Real Texts*, each targeting a different reading sub-skill, including general comprehension, scanning for specific information, sentence reconstruction, vocabulary mastery, and functional text comprehension. The content of each game was adjusted to align with the seventh-grade English curriculum, with narrative and descriptive texts selected as the primary text types, since both genres are commonly taught at this grade level. To sustain students' motivation throughout the learning activities, a reward system involving stars, levels, and a leaderboard feature was also designed at this stage.

In the Develop stage, the planned design was realized into a functional product using Canva, which provided both the visual design tools and the website-building feature required to publish the final product online. Canva's Artifical intelligence features were utilized to assist in generating visual elements and structuring the overall website layout. In addition, generative AI tools, namely ChatGPT and Claude, were used to help formulate prompts that guided certain aspects of the website's content and structure during the development process. The resulting product, *Readventure*, consists of a homepage where students enter their name before starting the activity (Figure 1), a leaderboard displaying student rankings based on accuracy and stars earned (Figure 2), and a game selection page offering five types of reading games (Figure 3). The product was equipped with two access modes: a Student Mode, in which students could select one of the five games, answer five randomly generated questions per session, and track their progress through the leaderboard; and a Teacher Mode, which allowed the teacher to monitor students' responses, identify which answers were correct and reset the leaderboard history when necessary.

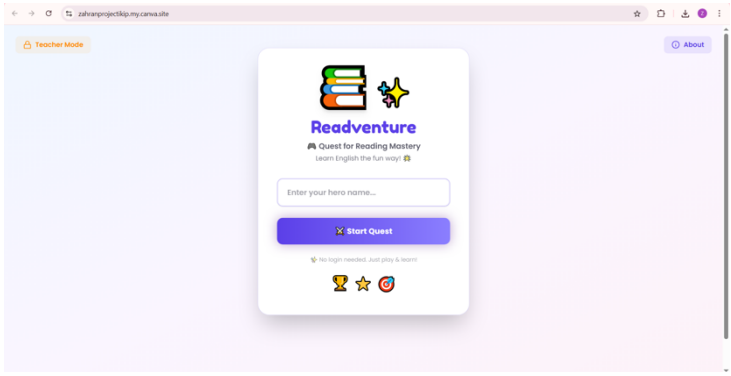

Figure 1: Homepage Readventure ("Start Quest")

The homepage of Readventure serves as the initial entry point for students before beginning the learning activities. As shown in Figure 1, students are prompted to enter a "hero name" before clicking the "Start Quest" button, a design choice intended to create an inviting, game-like first impression and to immediately signal that the learning activity ahead will differ from conventional classroom tasks.

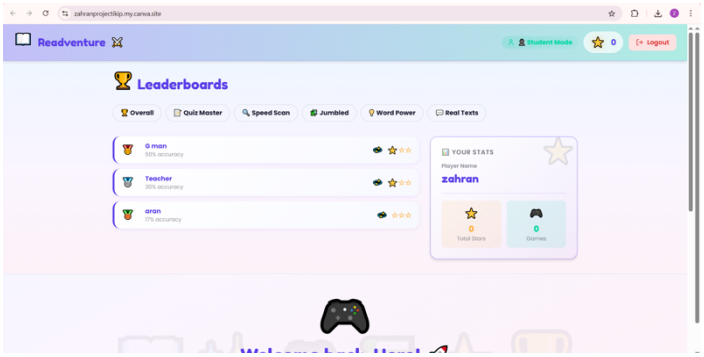

Figure 2: Leaderboard of Readventure

In addition to the homepage, *Readventure* is equipped with a leaderboard feature that displays student rankings based on accuracy percentage and the number of stars earned across the five available games, as illustrated in Figure 2. This feature also presents individual player statistics, including total stars collected and the number of games completed, allowing students to track their own progress alongside their standing relative to their classmates.

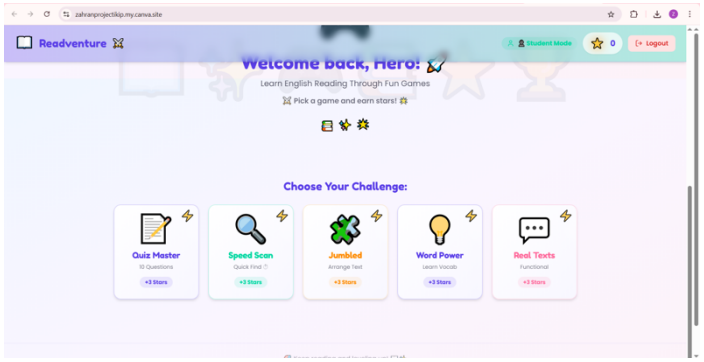

Figure 3: Game Selection Page of Readventure

Figure 3 presents the game selection page, where students may choose from five available games: *Quiz Master, Speed Scan, Jumbled, Word Power, and Real Texts*. Each game targets a

distinct reading sub-skill and rewards successful completion with three stars, encouraging students to attempt multiple games in order to accumulate a higher overall score.

In the implement stage, the product was tried out in two phases. The limited trial involved 10 students from class VII-F, aimed at identifying any technical or instructional issues before the product was used more broadly. After necessary revisions were made, the field trial was carried out with 36 students from class VII-C to evaluate the product's feasibility under more representative classroom conditions.

In the Evaluate stage, the quality of *Readventure* was assessed through expert validation involving two lecturers, as well as through student response questionnaires collected during both the limited and field trials. Field notes recorded throughout the implementation process were also used to support and enrich the interpretation of the quantitative findings.

Data Analysis Technique

Quantitative data obtained from the questionnaires were analyzed using the percentage formula, a technique commonly applied in R&D studies to determine the feasibility level of a developed product (Aini et al., 2024), in which the total score obtained was divided by the maximum possible score and multiplied by 100%. The resulting percentage was then interpreted using the following criteria: 81-100% (Very Good/Very Feasible), 61-80% (Good/Feasible), 41-60% (Fairly Feasible), 21-40% (Less Feasible), and 0-20% (Very Less Feasible). Meanwhile, data obtained from field notes were analyzed descriptively to support and enrich the interpretation of the quantitative findings.

RESULTS AND DISCUSSION

Results

The overall findings of this study indicate that Readventure, the AI-powered, game-based educational website developed for this research, was positively received by both expert validators and student users. The expert validation conducted by two lecturers resulted in a total score of 91.25%, categorized as Very Good. The student response questionnaire administered during the limited trial with 10 students from class VII-F yielded an overall percentage of 85% (Very Agree), while the field trial involving 36 students from class VII-C produced an overall percentage of 82.01% (Very Agree), with students' total scores averaging 32.81 out of a maximum of 40 (median = 33, mode = 32). These findings suggest that the developed product was not only considered feasible from an expert standpoint but was also well accepted by its intended users across two different stages of trial.

1. The Development Process

The development of *Readventure* followed the five stages of the ADDIE model.
Classroom observation during the analysis stage revealed students' low interest toward English lessons, which served as the basis for designing a more engaging, game-based alternative. During the design stage, five game types were planned, namely *Quiz Master, Speed Scan, Jumbled, Word Power,* and *Real Texts,* each targeting different reading sub-skills and aligned with the seventh-grade curriculum using narrative and descriptive texts. In the Develop stage, the product was built using Canva, leveraging its Artificial Intelligence features for visual design and website publishing, supported by generative AI tools used to assist in formulating content prompts during the development process. The final product was equipped with a

Student Mode for completing game-based reading activities and a Teacher Mode for monitoring student responses and managing the leaderboard.

2. Feasibility

Table 1. The Results of the Expert Validation of *Readventure*.

Validator	Total Score	Maximum Score	Percentage	Category
Validator I	36	40	90.00%	Very Good
Validator II	37	40	92.50%	Very Good
Combined	**73**	**80**	**91.25%**	**Very Good**

The combined score of 91.25% indicates that the content, language, media design, interactivity, and usability aspects of Readventure were considered highly appropriate for classroom implementation, requiring only minor revisions related to text difficulty level, as suggested by both validators in their comments.

3. Obstacles

Several obstacles were identified during the implementation process, as recorded in the field notes. During the limited trial conducted on May 5, 2026, students from class VII-F worked on *Readventure* in the school's computer laboratory (Figure 4). Students initially appeared confused about how to navigate the website, although this confusion subsided once the researcher introduced and explained how the product worked. It was also during this stage that a technical bug was found in the *Jumbled* game, in which students were unable to drag text boxes into the correct order. In addition, students' names occasionally failed to appear on the leaderboard after completing a game, and the buttons on the admin panel were temporarily unresponsive. These issues caused brief confusion among several students, although most were able to proceed after receiving guidance from the researcher or from peers who had already understood the system.

All three issues were resolved prior to the field trial. By the time the field trial was conducted on May 7, 2026, students from class VII-C worked through the activities with noticeably less confusion, as the technical issues identified earlier had already been resolved. No further technical problems were observed, and the implementation proceeded smoothly, with students actively engaging with the website under the researcher's supervision. It was also during this stage that students were observed becoming increasingly competitive after discovering the leaderboard feature, with several students requesting that their existing entries be deleted so that they could retry the games and improve their scores.

Figure 4: Students from Class VII-F Working on Readventure During the Limited Trial

4. Student Response

Table 2. The Recapitulation of the Student Responses Obtained from the Limited Trial (N=10) and the Field Trial (N=36).

Stage	n	Total Score	Maximum Score	Percentage	Category
Limited Trial (VII-F)	10	340	400	85.00%	Very Agree
Field Trial (VII-C)	36	1,181	1,440	82.01%	Very Agree

In the field trial, the highest-rated item was students' willingness to use the website again in future lessons (85.42%), while the lowest-rated items concerned increased motivation and confidence in reading English texts (79.17% and 79.86%, respectively). Although the overall response remained highly positive, individual variation was also observed; one respondent rated all ten items at the lowest possible score, which contributed to a wider score range despite the generally favorable mean.

Field notes further indicated that students' engagement increased markedly once they became aware of the leaderboard feature. Many students were observed repeatedly attempting the games to obtain higher scores, with some specifically asking the researcher to delete their existing leaderboard entries so they could retry and improve their results.

Discussion

Game elements such as leaderboards can fulfill students' need for competence by visually showing their achievement relative to others, which in turn supports the growth of intrinsic motivation (Sailer et al., 2017). This theoretical explanation aligns closely with the behavior observed in the field trial, where students' competitive engagement with the leaderboard, including their requests to retry and improve their scores, reflected a genuine intrinsic drive to achieve mastery rather than mere compliance with a classroom task. These findings are also consistent with the notion that reading engagement plays a crucial role in supporting reading comprehension, and that incorporating gamified elements such as points, ranks, and collaborative competition can help strengthen that engagement (Matyakhan et al., 2024).

The high acceptance found in both the expert validation and student response supports the broader claim that gamification can be applied for various educational purposes across different learning levels and fields (Zeybek & Saygı, 2024), extending this claim specifically to the context of reading instruction for junior high school EFL learners. This positive outcome is further aligned with evidence showing that gamification strategies, when applied specifically to EFL reading activities, can significantly enhance both students' reading comprehension outcomes and their intrinsic learning motivation (Julita, 2023). Moreover, the positive perception toward the AI-powered design of *Readventure* corresponds with prior findings showing that AI-mediated language instruction contributes to gains in motivation alongside learning achievement (Wei, 2023). This positive engagement observed throughout *Readventure's* implementation further aligns with empirical evidence confirming that AI application in EFL learning environments produces favorable effects on students' academic engagement and emotional experiences (Guo & Wang, 2025), reinforcing the potential of AI-integrated instructional media to foster more meaningful and enjoyable learning encounters. Moreover, a systematic review examining the influence of AI-powered tools on student engagement found that such tools consistently stimulate higher levels of active participation in

language learning task (Lo et al., 2024), a pattern that is clearly reflected in the behavioral observations recorded in this study's field notes, where students repeatedly chose to re-engage with the website's game activities voluntarily. This aligns with a comprehensive review confirming that gamification in EFL and ESL instruction consistently demonstrates positives effects on language acquisition, student engagement, and motivation across diverse learning contexts (Chan & Lo, 2024). Since previous research on Canva as a learning medium had mostly examined its use for writing instruction (Putri & Syafryadin, 2023), the present findings extend this line of research by showing that Canva's AI-powered design and website-building features can also be effectively applied to support reading instruction through a game-based format. Similar positive outcomes have also been noted for other game-based digital tools in EFL settings, which have been shown to effectively support vocabulary mastery and student engagement (Rattri & Rachman, 2024), suggesting that the trend of integrating game-based digital platforms into language instruction extends well, beyond the present study.

The obstacles identified during the limited trial, particularly the bug in the *Jumbled* game and the leaderboard display issue, highlight a practical challenge commonly faced in the development of self-built digital learning tools: technical refinement is often necessary before a product can be considered ready for wider implementation. The fact that these issues did not recur during the field trial, combined with the consistently high response rate across both trials, suggests that timely revision based on early user feedback played an important role in determining the product's overall success. Taken together, these findings suggest that competence-supportive, AI-assisted game design can sustain student engagement even when technical setbacks occur during early implementation, provided that timely revision is carried out a pattern with practical implications for how self-developed digital reading tools should be piloted before wider classroom use.

CONCLUSION

This study successfully developed *Readventure*, a game-based educational website powered by Canva Artificial Intelligence, designed to support reading instruction for seventh-grade junior high school students at one of the junior high school in Cimahi. Using the ADDIE model as the development framework, the product was found to be highly feasible, as reflected in the expert validation score of 91.25%, categorized as Very Good. Student responses toward the website were also consistently positive across both stages of trial, with an overall acceptance rate of 85% in the limited trial and 82.01% in the field trial, indicating that *Readventure* was well received by its intended users despite minor technical obstacles encountered during early implementation. Field notes further revealed that students became increasingly engaged and motivated once the leaderboard feature was introduced, demonstrating that competitive, game-based elements can effectively enhance students' participation in reading activities. Pedagogically, these findings suggest that integrating AI-powered platforms into game-based instructional media represents a viable and innovative strategy for making reading instruction more where student motivation and engagement remain persistent challenges. Future studies are encouraged to expand the scope of this research by examining the long-term effects of *Readventure* on students' actual reading comprehension skills, and by exploring its applicability across different grade levels or other language skills beyond reading.

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