

DEVELOPING MULTIMODAL POWERPOINT ANIMATIONS FOR ENHANCING STUDENTS' READING COMPREHENSION: A RESEARCH AND DEVELOPMENT STUDY

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ABSTRACT

This study aimed to develop an interactive English PowerPoint animation to improve junior high school students' reading comprehension and to identify the most effective interactive features for reading instruction. Using a Research and Development (R&D) approach based on the 4D model, the study was limited to the define, design, and develop stages. The participants were one English teacher and 20 ninth-grade students at SMPN 7 Palopo. Data were collected through questionnaires, interviews, expert validation, and classroom try-outs. The results showed that the developed media was highly effective, achieving a mean score of 3.61 and an effectiveness rate of 90.25% ("Very Good"). Expert validation confirmed high feasibility in terms of content, language, design, and interactivity. Key features contributing to its effectiveness included animated text and images, interactive quizzes, educational games, vocabulary audio, and reading materials adapted from students' textbooks. These features enhanced students' engagement, motivation, and comprehension during reading activities. The novelty of this study lies in the integration of curriculum-aligned reading texts, multimodal animations, and game-based interactive elements within a single PowerPoint-based medium that functions fully offline. This design offers a practical and accessible solution for schools with limited internet access. The findings indicate that interactive PowerPoint animation can support more student-centered reading instruction and serve as an effective alternative to traditional textbook-based learning in EFL classrooms.

Keywords: Animation, English Language Teaching, English Teaching Media, Interactive PowerPoint, Reading Skills

INTRODUCTION

Language consists of four primary skills that are speaking, listening, writing, and reading. These four languages are very important, and one of the most important skills to teach is reading skills. Reading is the ability to read, which analyzes the visual information found in written texts (Amin & Wahyudin, 2022). Reading skill could serve an important part in the improvement of other language abilities (Nasr, 2024). By reading, students can find

some specific information, understand the whole story, find reasons, explanations, summaries, and comments from the news they read. Students can also be entertained by reading, especially when students read comics, novels, short stories, etc. (Usman, Hendrik, Madehang, & Wisran, 2024). By having excellent reading skills, people can understand English written text well (Wahidin, 2020).

In the teaching process, reading skills are related to reading material, and motivation is the main factor influencing students' reading interests. Selecting the right teaching media to optimize the teaching and learning process to achieve learning objectives is necessary (Azizah, Syam, Madehang, Masruddin, & Husnaini 2024). However, many students encounter difficulties in reading comprehension due to complex vocabulary, unappealing teaching materials, and lack of motivation. These challenges are particularly evident at SMPN 7 Palopo, where observations and interviews with an English teacher revealed students' low interest in reading and their limited exposure to engaging teaching media.

Traditional approaches, such as textbook-based instruction, often fail to captivate students' attention and support their comprehension effectively. According to Wang (2022), traditional educational systems not only impose pressure on students but also transform them into test subjects. Implementing an appropriate teaching technique to improve EFL learners motivation will assist them in dealing with the obstacles they may have in reading comprehension (Chen & Hwang, 2020). Teaching media serves to enhance students' comprehension of the material they are studying. It is essential to ensure that students achieve comprehension to facilitate their engagement in a productive learning experience (Andriani, Ardiana, & Firman, 2022).

The media utilized in education varies based on the subject characteristic. One of the media is interactive animation (Pramana, Sudana, & Sasmita, 2020). The use of teaching media enables teachers to understand and apply learning materials systematically, efficiently, and thematically (Suryana, Sari, Winarti, Lina, Mayar, & Satria, 2021). It also assists teachers in delivering material more effectively, enhances the teacher's understanding of the media, and facilitates the students' learning process, particularly in accordance with the objectives of a teaching-learning scenario (Prabawati, Asriati, & Asmayanti, 2021). Teachers are required to be able to create and use interactive media in various forms and variations so that they can interact communicatively with students (Pulungan, 2021). Therefore, integrating interactive teaching media is considered a promising solution to enhance students' engagement and reading skills.

Interactive PowerPoint animation in learning refers to the use of Microsoft PowerPoint as a media for interactive learning. PowerPoint is frequently used as one of the digital teaching media for various levels of education (Nurwindasari, Wibowo, & Hastomo, 2025). The use of PowerPoint-based interactive teaching media that includes visual elements can make the teaching and learning process more enjoyable and motivate students to participate actively (Khobir, Mahmudah, & Musa, 2022). PowerPoint is designed through various interactive methods. However, the most effective methods include the use of video clips on PowerPoint slides, the creation of PowerPoint presentations, and the development of interactive quizzes with audio narratives (also known as voice overs) (Zayapragassarazan & Mohapatra, 2021). PowerPoint's features can improve the software's attractiveness or

comprehensibility for both teacher and students. PowerPoint offers several benefits for classroom use, such as that it can show static images or animations, add sound effects, videos, and high graphics, and include transitional effects between images, text, or slides (Baker, Goodboy, Bowman, & Wright, 2018).

Recent studies have demonstrated the positive impact of multimedia and interactive tools on students' language learning outcomes. Dewi, Mashuri, & Ma'ulah (2021) conducted the research of the effectiveness of multimedia, especially PowerPoint, in enhancing students reading comprehension. The result of the research found that multimedia-based PowerPoint presentations significantly improved students' reading comprehension in English texts. Similarly, Naimah, Jufriadi, & Muin (2023) highlighted the effectiveness of animated PowerPoint in enhancing students' listening skills through audio-visual elements. Putriana, Nellitawati, Bentri, & Alwi (2022), also developed and designed interactive multimedia based on PowerPoint for science learning in elementary schools. It is known that it is valid, practical, and effective to be used as a teaching media. These studies indicate that incorporating interactive and multimedia elements into teaching materials can address learners' needs and create a more engaging learning environment.

However, despite the research on multimedia-based teaching media continuing to grow, there is still a lack of studies that specifically explore the use of interactive PowerPoint animation developed to improve reading comprehension at the junior high school level. The previous research has tended to focus on other language skills, such as listening skills, or has examined multimedia in a more general sense, without highlighting the specific role of interactive PowerPoint animation.

The selection of PowerPoint in this research is based on several pedagogical and practical considerations. Although PowerPoint and other similar applications offer their own strengths and limitations, they function as complementary tools in design and presentation. The selection of platform depends on instructional goals, design needs, and user preference (Ramli & Chumayroh, 2025). PowerPoint can be used offline, compatible with standard school computers, and includes various features that support the development of interactive teaching media. Moreover, teaching media that can be used offline without relying on internet access are still limited, the offline features are highly important for schools with limited technological infrastructure, such as SMPN 7 Palopo, where offline accessibility is essential for effective classroom use.

This research aimed to design an English interactive PowerPoint animation as an innovative teaching media, and to identify the most effective interactive elements, animations, and learning activities that can be integrated into an English interactive PowerPoint animation to enhance students' reading comprehension. By designing and implementing the media in a classroom setting, the research seeks to explore how these features contribute to student engagement, learning motivation, and reading performance. The product integrates reading materials adapted from students' textbooks, animations, interactive quizzes, games, and vocabulary audio. It is designed as a soft file (PPTX) that can be accessed by both teachers and students without the need for an internet connection. The product can be used by teachers through LCD projectors and can also be accessed

individually by students via their smartphones. This media aims to improve the teaching and learning process as a solution to students' lack of interest and difficulties in reading.

This research brings a new perspective by combining visual animations, vocabulary audio, textbook-based reading materials, and interactive features such as quizzes and games into one teaching media. Its offline usability further enhances its practicality in real classroom settings, especially in areas where internet access is limited.

METHODS

Research Design

This research employed the Research and Development (R&D) method using the 4D model developed by Thiagarajan, Semmel, and Semmel (1974), Which consist of four stages: Define, Design, Develop, and Disseminate. However, this research was limited to the Develop stage due to time constraints and limited facilities. The focus was on designing, and evaluate the interactive elements, animation, and activities that integrated into the English interactive PowerPoint animation for reading skills.

The research and development (R&D) design was employed to systematically develop, validate, and evaluate the instructional media. The procedures were conducted in stages, starting with needs analysis, followed by media design, expert validation, revision, and product try-out.

Subject of the Research

The research was conducted at SMPN 7 Palopo, involving 20 ninth-grade students and one English teacher as participants. The 20 students were selected through random sampling from available ninth-grade students. Only 20 students participated because at the time of data collection, only 20 students were present and available, making this function as a pilot implementation to test the effectiveness of the developed media.

Data Collection Technique and Research Instrument

Data were collected using questionnaires, interviews, expert validation sheets, and a product try-out. The questionnaire was designed in the form of a close-ended instrument using a four-point Likert scale (1 = Poor, 2 = Fair, 3 = Good, 4 = Very Good). Questionnaires were used to identify students' and teacher's perceptions of the deficiencies of the existing teaching media and the feasibility of the developed teaching media. To support the data from questionnaires, a structured face-to-face interview was conducted with the English teacher during the needs analysis phase and after the product try-out to obtain qualitative data related to the target needs and to gain insights into students' learning needs and challenges. In addition expert validation involved three experts specializing in language, content (material), and media design. The validation rubric assessed content accuracy, language appropriateness, product design, visual quality, interactivity, and technical functionality. All research instruments, including questionnaires, interview guidelines, and validation sheets, were validated by experts to ensure clarity and content validity prior to data collection.

Stages of Product Development

Define

This stage included a needs analysis to identify students' challenges in reading comprehension and their preferences for teaching media. The questionnaire was delivered to students, and an interview was conducted with the English teacher to gather insights about target needs, lacks, and wants. The needs analysis indicated that students experienced difficulties related to limited vocabulary and complex sentence structures and preferred more interactive and visually supported teaching media. In addition, the English teacher emphasized the need for instructional media that integrates animated illustrations and game-based activities while remaining fully accessible offline due to limited internet access and device availability.

Design

The media was designed based on the findings of the needs analysis. The product included reading materials adapted from students' textbooks, animations, interactive quizzes, games, and vocabulary audio. The initial draft was prepared in the form of a PowerPoint presentation (PPTX) to allow offline accessibility. Considering the limited facilities at the research site (school with limited internet access).

Develop

The develop stage focused on validating, revising, and implementing the designed media. Expert validation was conducted by three experts (language, material, and design) to evaluate the developed teaching media. Revisions were made based on experts' feedback to improve the teaching media's quality and feasibility. The validated teaching media was then implemented in a classroom setting during a product try-out session to evaluate its effectiveness and gather students' and teacher's perceptions.

Data Analysis Technique

Quantitative data obtained from questionnaires and expert validation were analyzed using descriptive statistics by calculating mean scores and percentage values. The results were categorized into four levels: Very Good, Good, Fair, and Poor. Qualitative data from interviews and expert suggestions were analyzed thematically to support the quantitative findings and to provide deeper insights into the media's practicality and effectiveness.

RESULTS

Experts Validation

The media development followed the 4D model stages (Define, Design, and Develop), and its effectiveness was evaluated through expert validation and classroom try-out. The product contains reading materials adapted from students' textbooks, animations,

interactive quizzes, games, and vocabulary audio. It was designed in the form of a PowerPoint file (PPTX) to enable offline access for both teachers and students.

Table 1. Experts Validation Results

Aspect	Mean Score	Percentage (%)	Category
Language	3.75	93.75%	Very Good
Content (Material)	3.60	90.00%	Very Good
Average	3.55	88.75%	Very Good
Total	3.63	90.83%	Very Good

Experts agreed that the product was clear, engaging, and pedagogically appropriate for junior high school students. Minor revisions were suggested, including improving navigation buttons, and enhancing text visibility. The high validation score indicates that the developed media achieved very good feasibility and quality standards, showing that it met the expected language, content and design criteria.

Product Try-Out

The media was implemented with 20 ninth-grade students at SMPN 7 Palopo. The teacher was asked to use the media during reading lessons, and students' perceptions were collected through questionnaires. The mean score obtained from students' perceptions was 3.61 (out of 4), with an effectiveness rate of 90.25%, which falls into the "Very Good" category.

Table 2. Students' Perception of the Media

Criteria	Mean Score	Category
Engagement and Motivation	3.7	Very Good
Ease of Use	3.6	Very Good
Clarity of Reading Materials	3.5	Good
Interactive Features (Quizzes, Games)	3.8	Very Good
Vocabulary Audio Effectiveness	3.9	Very Good
Total	3.61	Very Good

These findings demonstrate that the interactive PowerPoint effectively enhanced students' engagement, motivation, and comprehension during reading activities. The results also reveal that students found the interactive elements particularly quizzes, animations, and vocabulary audio highly enjoyable and supportive of their understanding.

After the try-out session, interview was conducted with the English teacher, the English teacher observed that students became more attentive and participative when using the media compared to the traditional learning method. The teacher also reported that the combination of visuals, audio, quizzes, games, and animations made reading activities more interactive and easier to follow, particularly for lower-proficiency students.

DISCUSSION

The incorporation of interactive features such as navigation buttons, clickable elements, and interactive quizzes play an important role in enhancing student engagement. These features allow students to actively participate in the reading process rather than being a passive learner. According to Mayer's Multimedia Learning Theory (Mayer, 2009), interactive elements and well-designed visual aids help learners integrate verbal and visual information more efficiently. The animations, images, and structured layout used in this media support the cognitive processes of selecting, organizing, and integrating information, which are essential for understanding narrative texts. According to Ibrahim (2020), The student's increased engagement with the digital texts, which provided high levels of interaction with the digital text.

The media also contributes to increased student motivation. Features such as interactive quizzes and educational games foster a sense of competence because students receive immediate feedback and can monitor their progress. The clickable navigation buttons and flexible structure enable both teachers and students to control the pace of learning. Additionally, because the content is directly adapted from their textbook, the material feels familiar, relevant, and meaningful. These motivational components align with the principles of Self-Determination Theory proposed by Deci and Ryan (2000), helping create a more relaxed and enjoyable learning atmosphere while fostering greater interest in reading activities.

The integration of vocabulary audio, contextual animations, and curriculum-aligned texts further enhances comprehension. Vocabulary audio helps students recognize correct pronunciation and acquire new words, which is essential for understanding narrative texts. Contextual animations assist learners in visualizing story settings and events. This aligns with findings from Dewi et al. (2021), who reported that multimedia-based PowerPoint presentations improve comprehension by making abstract concepts more concrete. Similarly, prior research by Putriana et al. (2024) demonstrates that interactive multimedia increases practicality and effectiveness in classroom settings, supporting the outcomes of this research.

A practical advantage of the developed media is its offline accessibility. Unlike other digital platforms that require a stable internet connection, this PowerPoint functions fully offline, the media offers a feasible and sustainable solution for English teaching, making it especially suitable for schools with limited technological infrastructure. This accessibility also enables teachers to deliver reading lessons more efficiently by providing ready-to-use materials that support enjoyable and interactive instructional practices. Overall, the

combination of cognitive support, motivational enhancement, curriculum alignment, and practical accessibility explains why the interactive PowerPoint animation is effective in improving students' reading skills. This research therefore contributes to the growing body of literature highlighting the value of interactive multimedia in fostering meaningful and engaging reading learning experiences.

CONCLUSION

This research aimed to design an English interactive PowerPoint animation as a teaching media to improve students' reading skills at SMPN 7 Palopo. The media was developed using the 4D model (limited to the Define, Design, and Develop stages). It includes reading materials adapted from students' textbooks, animations, interactive quizzes, games, and vocabulary audio to create an engaging and effective learning experience.

The results from expert validation and classroom try-out indicate that the media is highly effective in enhancing students' reading comprehension, motivation, and engagement. The product achieved a mean score of 3.61 and an effectiveness rate of 90.25%, qualifying as "Very Good". Interactive features such as animations, quizzes, and games were particularly successful in helping students understand reading materials and increasing their participation during lessons.

From a theoretical perspective, this research contributes to the existing body of knowledge on multimedia learning in EFL contexts by demonstrating how animation-based and interactive PowerPoint features can facilitate cognitive processing, enhance learner engagement, and support reading comprehension. The findings provide insight into the pedagogical value of interactive multimedia and extend theoretical understanding of how digital animations and multimodal inputs can optimize learning outcomes in language classrooms.

Practically, the developed media offers a feasible and sustainable instructional resource, particularly for schools with limited internet access. Its offline functionality allows teachers to implement interactive, student-centered reading lessons without depending on online platforms. The media also serves as a useful tool to assist teachers in delivering reading instruction more effectively and engagingly.

Future studies are recommended to expand the scope of the media to include other English language skills such as listening, speaking, and writing. Additionally, integrating more advanced features such as voice recognition or interactive storytelling could further enhance students' learning experiences. Teachers are encouraged to adapt and innovate similar teaching media to suit their students' needs and technological infrastructure.

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