

Interactive Digital Storybooks: A Personalized Approach To English Learning In Indonesian Primary School

Ulya Himawati^{1*}, Danang Mahendra², Laila Ngindana Zulfa³, Gadis Herningtyasari⁴, Santi Andriyani⁵, Hamidaturrohmah⁶, Yulia Septiviyana⁷

^{1,3,4}Universitas Wahid Hasyim, Indonesia

^{2,5,6,7}Universitas Islam Nadlatul Ulama, Indonesia

Abstract

Primary English education in Indonesia faces challenges in developing learning resources that meet individual student needs. To address this, the Merdeka Belajar policy promotes a tailored learning approach. This study evaluates the use of an Interactive English Story Book that integrates interactive elements, audio, and visuals for fourth-grade students learning English. The evaluation was conducted by the researcher and the English teacher through classroom observations, interviews, and questionnaires over a three-week period, involving a small pilot sample of thirteen students aged nine to ten at Bina Putra School. The measured aspects included the domains of engagement (assessed by visual focus and responses to interactive elements), motivation (assessed by the initiative to start learning activities), and reading comprehension all evaluated against the benchmarks of personalized and student-centered learning principles within the Merdeka Belajar framework. The findings indicate that nearly all students demonstrated enthusiastic behavior and reported an increase in learning motivation. However, comprehension outcomes varied; the vast majority of the total students showed varying degrees of difficulty, indicating that visual elements alone were insufficient without an interactive glossary or guided explanations. To avoid confirmation bias, observations noted variations among students influenced by their prior digital familiarity. Several students who were less familiar with technology experienced navigation barriers and required additional support, which triggered off-task behavior in the form of confusion when operating the interactive features. Meanwhile, the teacher reported that the storybook facilitated personalized learning, but technical improvements in usability are highly required before the medium can be declared fully feasible for widespread independent use.

ARTICLE HISTORY

Received : 15 March 2026

Revised : 31 May 2026

Accepted : 10 June 2026

KEYWORDS

English learning; Interactive digital storybook; Personalized learning

PUBLISHER'S NOTE

This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY 4.0) license.



CORRESPONDING AUTHOR

*Ulya Himawati, Universitas Wahid Hasyim, Indonesia. Email: ulyahimawati@unwahas.ac.id

Introduction

Indonesia's primary school English education faces persistent challenges, particularly in accessibility and the customization of learning resources to meet students' diverse needs (Shaturaev, 2021). Many schools lack adequate English learning materials, and teacher training remains inconsistent, leading to disparities in student outcomes (Carrete-Marín et al., 2024). Furthermore, traditional instructional methods may not effectively engage young learners, who require interactive and multimodal approaches to develop proficiency in reading, writing, and speaking English (Pen & Singh, 2025).

To address these challenges, the Indonesian Ministry of Education and Culture introduced the Merdeka Belajar policy, which promotes learning innovations through a personalized and student-centered approach (Drigas & Mitsea, 2021). This strategy emphasizes adaptive learning that accommodates students' learning styles, paces, and interests (Rincon-Flores et al., 2024). In line with this policy, digital interactive storybooks have gained attention as a promising tool for improving

English learning engagement and effectiveness in Indonesian primary schools (Hakim & Wahyuni, 2024).

One technological advancement in language education that aligns with the principles of Merdeka Belajar is the development of digital interactive storybooks. These tools integrate text, visuals, audio, and interactive elements to enhance student engagement and comprehension (Hojeij et al., 2021). Research suggests that multimodal learning environments improve retention and motivation, making digital storybooks an effective educational resource for young learners (M. Li, 2025). Furthermore, personalized features in interactive storybooks allow students to progress at their own pace and engage in self-directed learning (Petousi et al., 2022).

However, the adoption of these digital media also introduces significant theoretical risks for young learners if not carefully designed. The excessive integration of multimedia elements can potentially cause cognitive overload, where overly busy visual and auditory stimuli distract students from the core text and hinder deep comprehension. Additionally, non-essential interactive features, such as games or gamified animations, often trigger superficial engagement, where students merely click on random features for entertainment without meaningfully processing the linguistic content. These risks are further compounded by structural challenges, such as unequal device access and unstable connectivity, which can create digital divides in the classroom and limit the effectiveness of personalized learning for students who lack adequate facilities or prior digital literacy.

Several studies highlight the advantages of digital interactive storybooks in language learning. These storybooks provide gamified learning experiences, audio-assisted reading, and contextualized learning environments, which have been shown to improve student engagement and comprehension (Putri et al., 2024). Additionally, interactive storybooks allow students to actively participate in learning rather than passively consume content, enhancing reading fluency and vocabulary acquisition (Ariyani & Kholidaziya, 2024).

Despite these advantages, comprehensive feasibility studies are still required to evaluate the effectiveness, usability, and accessibility of digital interactive storybooks in Indonesian classrooms (Rochmiyati et al., 2024). While previous studies focus largely on student engagement and motivation, there is limited empirical evidence on how interactive storybooks contribute to reading comprehension, vocabulary development, and critical thinking skills (Astuti et al., 2024). Additionally, technical usability and device compatibility issues remain underexplored, creating challenges for large-scale implementation.

This study aims to fill these gaps by conducting a comprehensive feasibility analysis of digital interactive storybooks as a personalized learning medium within the Merdeka Belajar framework. Unlike prior research, which primarily focuses on student enthusiasm, this study systematically evaluates: (1) the pedagogical effectiveness of digital storybooks in achieving learning objectives, (2) the technical functionality and usability of interactive features, and (3) the alignment of digital learning resources with national curriculum goals.

This study aims to evaluate the initial responses of fourth-grade students toward the utilization of an Interactive English Story Book, specifically focusing on visual engagement and early affective initiative, rather than measuring fully autonomous learning or deep linguistic comprehension. Given the constraints of a short three-week intervention and a small pilot sample, the scope of the methodology is strictly adjusted to identify technical navigation barriers, fluctuations in students' visual focus when encountering interactive features, and contextual difficulties when

handling culturally unfamiliar narratives. By narrowing this scope to match the empirical evidence, this research specifically aims to map school digital infrastructure readiness and variations in student adaptation based on their prior digital familiarity, serving as a critical baseline evaluation before the medium can be deployed for actual autonomous learning.

By addressing these research gaps, this study provides empirical data on best practices for implementing digital interactive storybooks, helping policymakers, educators, and curriculum developers make informed decisions about technology-enhanced language learning. Findings from this study will contribute to: (1) educators by providing practical strategies for integrating digital storybooks into English instruction. (2) policymakers, by informing curriculum development and teacher training initiatives. (3) digital learning developers, by guiding the design of more user-friendly and pedagogically sound educational technology. (4) global educational frameworks, by contributing to research on technology-enhanced learning in developing countries, and implementing student-centered education reforms.

As interactive digital storybooks continue to be explored in language education, this study will provide critical insights into their pedagogical effectiveness, technological feasibility, and policy implications. Ultimately, the findings will support the transition from traditional instructional methods to modern, digital learning approaches, ensuring that interactive storybooks become a valuable educational resource for primary school students across Indonesia.

Digital storybooks have emerged as a transformative tool in language learning, particularly for young learners. Research indicates that multimodal learning environments that incorporate text, visuals, and audio significantly enhance student engagement, comprehension, and motivation (Bernacki et al., 2021). The interactive elements of digital storybooks, such as animations, quizzes, and adaptive reading pathways, encourage active learning, helping students process and retain new language structures more effectively (Rajendran & Yunus, 2021).

Empirical studies confirm the benefits of digital storytelling. For example, Petousi et al. (2022) found that digital storytelling increases student motivation, particularly through gamification and interactive features. Similarly, Rutta et al. (2021) demonstrated that digital reading tools enhance word recognition and sentence construction. However, most prior studies rely on self-reported surveys, which may introduce response bias (Hojeij et al., 2021). More robust methods, such as observational tracking and controlled experimental designs, are needed to assess long-term student engagement and retention.

In the landscape of language education technology, it is crucial to clearly distinguish between digital storytelling and digital storybooks, as they represent distinct pedagogical interventions that cannot be used interchangeably. Digital storytelling refers to a student-centered process where learners act as creators (student-as-creator), actively composing, narrating, and producing their own digital stories to develop language proficiency. Conversely, the product evaluated in this study is an interactive digital storybook (InES Book), a multimedia-enriched text that positions the student as a consumer of content (student-as-consumer).

Personalized learning refers to an instructional approach that tailors education to individual student needs, skill levels, and learning preferences (Shemshack & Spector, 2020). Unlike traditional one-size-fits-all models, personalized learning adjusts content delivery and learning pace, allowing students to progress at their speed (Taylor et al., 2021). Digital interactive storybooks align with personalized learning principles by incorporating self-paced reading, adaptive content, multimodal

engagement, and real-time feedback. Key studies confirm that these features enhance student autonomy and improve learning outcomes (H. Li et al., 2023). However, challenges remain. While adaptive reading tools benefit diverse learners, they require digital literacy skills, which may disadvantage students with limited technology access (Alrawashdeh et al., 2024). Further research is needed to examine digital equity issues in underprivileged areas, ensuring that personalized digital resources remain inclusive and accessible.

In the context of instructional technology, personalized learning must be strictly defined to avoid being conflated with standard user control, as merely allowing students to read at their own pace or manually toggle multimedia features represents static adjustment rather than true adaptive personalization. Genuine personalized learning requires an automated, responsive system capable of analyzing student performance data in real time and dynamically modifying instructional pathways such as adjusting vocabulary difficulty or providing targeted feedback to meet individual learner needs. Consequently, since the interactive digital storybook evaluated in this study relies entirely on manual operational controls and lacks data-driven adaptation algorithms, its alignment with the Merdeka Belajar framework is limited to providing diverse learning modalities rather than delivering systemic, adaptive personalization.

A strong theoretical foundation is necessary to explain why digital interactive storybooks enhance language learning outcomes. This study integrates three key learning theories to provide a conceptual basis for evaluating their effectiveness in primary education. Vygotsky's Sociocultural Theory (1978) emphasizes that language learning is a social process, facilitated by scaffolding and interaction. Digital interactive storybooks support this theory by embedding interactive prompts, guided assistance, and voice narration, allowing students to develop language skills with contextual support. Mayer's Cognitive Theory of Multimedia Learning (2020) posits that dual-channel processing (visual & auditory) optimizes comprehension while reducing cognitive overload. Digital storybooks leverage animations, sound effects, and text-to-speech to enhance learning efficiency. Self-Determination Theory's Deci and Ryan (2004) highlight the importance of intrinsic motivation in learning, emphasizing autonomy, competence, and engagement. Digital storybooks promote student agency through self-paced exploration, gamified challenges, and real-time feedback. By integrating these theories, this study offers a stronger foundation for understanding how digital interactive storybooks support student engagement, comprehension, and motivation. However, further empirical research is needed to evaluate whether these theoretical benefits translate into measurable long-term learning gains.

Despite the growing interest in digital storybooks for language learning, important gaps remain in the literature. First, many previous studies have primarily emphasized learners' enjoyment, motivation, or general perceptions of multimedia-based learning, while providing limited evidence about how interactive storybooks support or constrain young learners' comprehension of unfamiliar vocabulary, longer sentences, and culturally unfamiliar narrative contexts (Hojeij et al., 2021; Li et al., 2023). Second, studies of digital learning media in Indonesia have rarely examined pedagogical engagement and technical usability simultaneously. Consequently, it remains unclear whether students' positive responses to animations, audio narration, and quizzes reflect meaningful learning engagement or merely short-term attraction to multimedia features (Hakim & Wahyuni, 2024; Rochmiyati et al., 2024). Third, the concept of personalized learning is often used broadly to describe self-paced digital learning, even though genuine personalization requires adaptive systems

that respond to individual learner performance. Therefore, limited evidence is available regarding how a non-adaptive interactive storybook can realistically support student-centred learning within the Merdeka Belajar framework, particularly when students differ in digital familiarity, navigation skills, device access, and connectivity conditions. These gaps indicate the need for an exploratory feasibility study that examines the pedagogical responses, usability constraints, and contextual readiness surrounding the use of interactive digital storybooks in Indonesian primary English classrooms.

The novelty of this study lies in its integrated exploratory evaluation of an Interactive English Story Book for Indonesian primary learners through pedagogical, technical, and contextual lenses. Unlike earlier studies that predominantly emphasize students' enjoyment, motivation, or general perceptions of digital storybooks, this study jointly examines visual engagement, early motivational responses, reading-comprehension difficulties, operational usability, and variations in students' prior digital familiarity. It also distinguishes self-paced multimodal learning from fully adaptive personalized learning, thereby avoiding the assumption that learner control alone constitutes personalization. By combining student questionnaires, structured classroom observations, and teacher interviews within a short pilot implementation, the study provides an evidence-based feasibility baseline for refining interactive storybook design, particularly through navigation guidance, contextual vocabulary support, and more inclusive access features. Its contribution is therefore not to claim broad effectiveness, but to identify the pedagogical and usability conditions required before interactive digital storybooks can be more widely implemented in Indonesian primary English classrooms under the Merdeka Belajar framework.

Accordingly, this exploratory mixed-methods pilot study aims to examine fourth-grade students' engagement, self-reported motivation, reading comprehension responses, and operational usability while using an Interactive English Story Book. Specifically, the study investigates how students interact with the storybook's multimodal features, identifies navigation, vocabulary, cultural, and infrastructure-related barriers, and examines the extent to which its self-paced design supports student-centred learning within the Merdeka Belajar framework. Rather than evaluating fully adaptive personalized learning or making broad claims of effectiveness, the study provides an initial feasibility baseline for improving the usability, accessibility, and pedagogical design of interactive digital storybooks in Indonesian primary schools.

Method

This study adopted a mixed-methods approach, combining both quantitative and qualitative methods data to gain a well-rounded understanding of how the Interactive English Story Book impacts student engagement, motivation, and comprehension. The decision to use mixed methods was based on the idea that numbers alone cannot capture the full experience of learning, and qualitative insights help explain the nuances behind the data (Creswell & Clark, 2018).

This study adopts a sequential explanatory mixed-methods design, wherein quantitative and qualitative data are not merely analyzed in isolation but are systematically integrated during the interpretation phase to generate valid meta-inferences (Creswell & Clark, 2018). The decision to use mixed methods is based on the premise that quantitative scores alone cannot fully capture the learning experience, and qualitative insights help explain the nuances behind the statistical data. To operationalize this integration, the study utilizes a Construct-Oriented Joint Display Matrix that structures the analytical workflow into three distinct phases: converging the descriptive

questionnaire data from the thirteen students, thematically coding the three-week classroom observations and teacher interviews, and cross-referencing them side-by-side to directly compare statistical trends against lived classroom behaviors.

Through this integrated data visualization, the researchers formulated explicit meta-inferences by assessing how well qualitative insights such as prior digital familiarity and cultural barriers explained the variances in students' diverse comprehension and motivation outcomes. This systematic merging of data serves to confirm, expand, or challenge the statistical findings, such as contrasting high enthusiasm scores against observation data showing off-task behaviors due to technical failures. By utilizing this joint display framework, the reciprocal relationship between operational application navigation and linguistic comprehension is fully justified, thereby mitigating the risk of confirmation bias that typically arises when questionnaire data is interpreted in an isolated, superficial manner.

Through student questionnaires, the study gathered numerical data on engagement and motivation, while teacher interviews and classroom observations provided in-depth insights into how students interacted with the digital storybook. This approach aligns with past research showing that blending quantitative and qualitative methods results in a more thorough understanding of digital learning experiences (Cohen et al., 2017).

Qualitative data in this mixed-methods study was gathered through an in-depth semi-structured interview lasting a total of 45 minutes with the English teacher, combined with three weeks of structured classroom observations to ensure source triangulation. The interview protocol was rigorously designed around four primary domains: (1) students' affective responses and visual focus during media interaction, (2) operational barriers in technological navigation and connectivity stability, (3) cognitive constraints in comprehending culturally unfamiliar multilingual texts, and (4) the effectiveness of instructional differentiation within the Merdeka Belajar framework. All audio recordings were processed using verbatim transcription procedures, which were subsequently verified through a member-checking mechanism with the participant to ensure data trustworthiness.

Data analysis followed a sequential thematic coding approach, progressing from open coding to axial coding categories, and finally to conceptual themes. To prevent confirmation bias and avoid grounding thematic claims on a single, non-specific interview, strict selection criteria for participant verbatim quotes were methodologically enforced. The teacher's interview quotes were only eligible for selection and presentation if they satisfied three conditions: (1) they documented recurrent patterns corroborated by field notes from the three weeks of classroom observation, (2) they illustrated extreme variations among students (such as contrasting responses between digitally literate and tech-anxious learners), and (3) they explicitly explained quantitative data anomalies, such as instances of off-task behavior occurring despite high enthusiasm scores in the questionnaires.

Given the relatively small number of participants, purposive sampling was used, focusing on students who actively engaged with the storybook and whose teacher was familiar with digital learning methods (Etikan et al., 2016). Since this is an exploratory case study, the goal was not broad generalization but rather to identify key trends that could inform future, larger-scale research (Gomm et al., 2009). The study also acknowledges the limitations of a small sample size and encourages future research with a larger and more diverse group of students to strengthen external validity. To capture different perspectives on the learning experience, the study used three primary

tools.

This study must be explicitly acknowledged as a single-classroom case study since data collection was confined to one English teacher and thirteen students within a single institution, which significantly restricts the transferability and generalizability of its findings on a macro scale. Relying on a single educator cannot methodologically substantiate broader claims regarding general teacher perspectives or systemic implementation readiness, as the reported positive outcomes are highly susceptible to personal subjectivity, individual digital competencies, and courtesy bias toward the researchers. Furthermore, the operational feasibility of the Interactive English Story Book (InES Book) concluded in this study remains localized and conditional upon the specific traits of a suburban school, losing its transferability when projected onto rural primary schools with electricity and internet constraints, or urban schools with advanced digital literacy baselines. Consequently, the conclusions drawn from this study do not serve as scientific generalizations, but rather as localized, exploratory insights that necessitate multi-case replications before the medium can be broadly recommended for widespread educational adoption.

Student Questionnaires

A Likert-scale questionnaire was employed to examine students' perceptions of the Interactive English Story Book, with response options ranging from 1 (strongly disagree) to 5 (strongly agree). The instrument was adapted from Barkley and Major's (2020) framework on student engagement in digital learning environments to ensure both validity and relevance. The questionnaire consisted of three interrelated sections. The first section, Engagement, explored the extent to which the storybook sustained students' attention, stimulated their interest, and provided enjoyment throughout the learning process. The second section, Motivation, assessed students' willingness and enthusiasm to continue learning through the storybook, focusing on both intrinsic and extrinsic motivational factors. The third section, Usability and Comprehension, evaluated the ease with which students navigated the digital interface and understood the content, including the clarity of instructions and overall user-friendliness. Structuring the instrument in this manner allowed for a comprehensive analysis of the storybook's capacity to enhance engagement, sustain motivation, and facilitate ease of use in a digital learning context.

Adopting an instrument originally designed for higher education faculty engagement into a primary school context for students aged 9–10 requires substantial developmental adaptations to ensure data validity within the concrete operational stage. The reconstruction process was rigorously executed through extensive language simplification and construct deconstruction such as operationalizing "autonomous engagement into the observable behavior "I turn to the next story page without being told by the teacher followed by cognitive testing using think-aloud and verbal probing techniques with three non-sample peers. This clinical pilot revealed that the original 5-point Likert scale confused young learners regarding response gradations, prompting a strategic shift to a dichotomous scale (Yes/No) reinforced with visual facial emoticons (smiling/flat icons). Given the small sample size (N = 13) and the resulting binary format, internal consistency was estimated using the Kuder-Richardson 20 (KR-20) formula, yielding a reliable coefficient of 0.74, which exceeds the standard psychometric threshold (>0.70) and verifies the instrument's robustness in capturing initial student engagement.

Classroom Observations

Observations were conducted over four weeks, during regular English lessons, focusing on how

students interacted with the storybook. The observations captured (1) how students navigated the interactive features. (2) Which elements (animations, quizzes, audio) engaged them the most? (3) How the teacher supported student learning. The observation framework is the CLASS model, which is commonly used to assess student engagement and teacher effectiveness in interactive learning settings (Grissom & Youngs, 2016).

To establish a fully objective and reproducible qualitative protocol, the three-week classroom observations were systematically conducted utilizing a non-participant observation approach, placing the researcher passively at the back of the room to mitigate the Hawthorne effect and preserve natural student behaviors. Raw descriptive field notes were transformed into structured data through a line-by-line coding mechanism guided by an a priori coding scheme that tracked three operational domains within 5-minute intervals: Visual Focus (VF), Off-Task Behavior (OTB), and Affective Initiative (AI). To safeguard interpretive trustworthiness and eliminate single-researcher bias, a second independent coder specializing in educational technology analyzed a 25% sample of the observation notes; the inter-observer reliability calculated via the percentage of agreement index yielded a robust consensus rate of 88% (exceeding the 80% qualitative threshold), with minor discrepancies fully resolved through joint reconciliation before data integration.

Teacher Interviews

To gain insights from an educator's perspective, semi-structured interviews were conducted with the English teacher. The questions aimed to explore: (1) The teacher's experience using the digital storybook in lessons. (2) Challenges in integrating digital tools into traditional teaching. (3) Suggestions for improving the tool. Interviews are analyzed thematic analysis approach, where key themes are identified based on recurring responses (Braun & Clarke, 2021).

Result and Discussion

Result

This study aims to evaluate the effectiveness of the Interactive English Story Book in enhancing student engagement, motivation, comprehension, and ease of use, while also considering its alignment with the Merdeka Belajar curriculum. To capture a well-rounded picture of its impact, data were gathered through student questionnaires, classroom observations, and teacher interviews. This triangulated approach ensured the results reflected not only the students' experiences but also the perspectives of educators observing the implementation in real classroom settings.

Pedagogical Effectiveness in Achieving Learning Objectives Engagement

The feedback from students about their engagement with the Interactive English Story Book was overwhelmingly positive. Many of them shared how much they enjoyed the experience, describing it as fun, exciting, and different from their usual lessons. They particularly loved the animations, sound effects, and interactive features like quizzes and clickable story elements that made them feel more involved in the learning process. It wasn't just about reading; it was about exploring and interacting with the story in a way that kept them curious and attentive. Most students selected "Strongly Agree" when asked if the storybook made them want to participate more actively in their English lessons. Several even mentioned that they looked forward to the next time they could use it in class.

These positive impressions are reflected in the results of the questionnaire distributed to the students. The data showed that they expressed high levels of engagement, confirming that the interactive elements of the storybook successfully captured their interest and encouraged active

participation in their learning. This is indicated by the following questionnaire results.

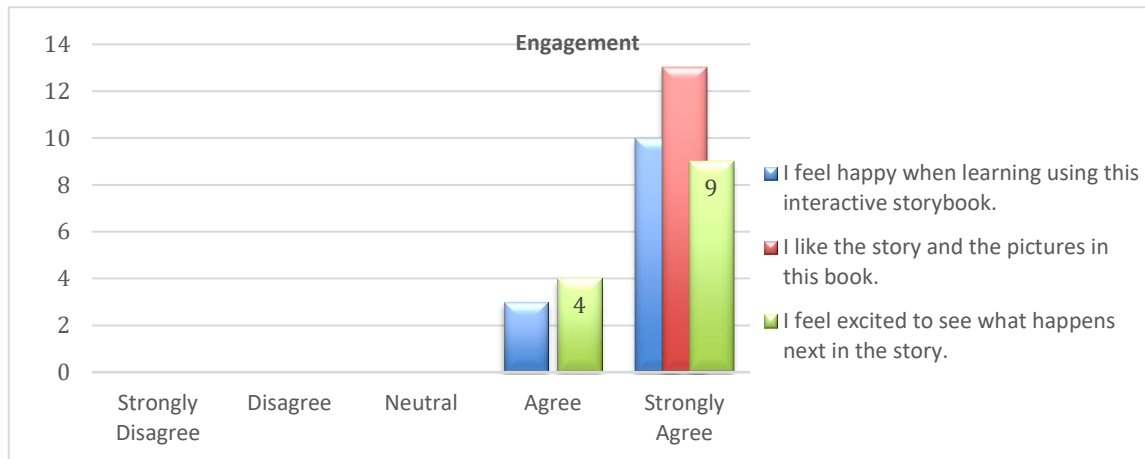


Figure 1. Result of Engagement

What students expressed in their questionnaires was also very apparent during classroom observations. As the lessons unfolded, many students could be seen leaning in closer to their computers, their faces lighting up with smiles and laughter as they interacted with the different story elements. It was clear that they were not just going through the motions; they were genuinely engaged. Teachers noticed that students who usually lost focus during lessons stayed attentive for longer periods. The classroom atmosphere was different from the usual: quieter, but in a good way, with everyone deeply absorbed in the activity. There were moments when students spontaneously clapped or cheered after completing a task, like finishing a quiz or unlocking a new part of the story. These reactions spoke volumes about their excitement and sense of achievement.

In one-on-one interviews, teachers shared similar observations. Many commented on how the Interactive English Story Book managed to grab and hold the attention of students, including those who typically struggled to stay on task. The teacher smiled as she recalled, “As soon as the animations start, the whole room quiets down they’re completely focused. Even the kids who usually fidget a lot are glued to their screens.” The teacher also noted that some students were so eager that they asked if they could spend extra time exploring the storybook during their free periods. According to the teachers, this level of excitement and motivation was something they rarely saw with traditional textbooks or worksheets. For them, it was clear: the storybook brought a new kind of energy into their English lessons.

Comprehension of Learning Material

When it came to understanding the material, the feedback from students was mostly positive. According to the questionnaire results, Students felt that the Interactive English Story Book helped them learn new vocabulary and made it easier to follow the storyline. Many mentioned that the combination of pictures, sounds, and interactive tasks helped them make sense of the content in a way that regular textbooks hadn’t. That said, some of the students gave neutral responses, suggesting they found parts of the material a bit challenging especially when it came to more complex words or cultural references that weren’t familiar to them. This is indicated by the following questionnaire results.

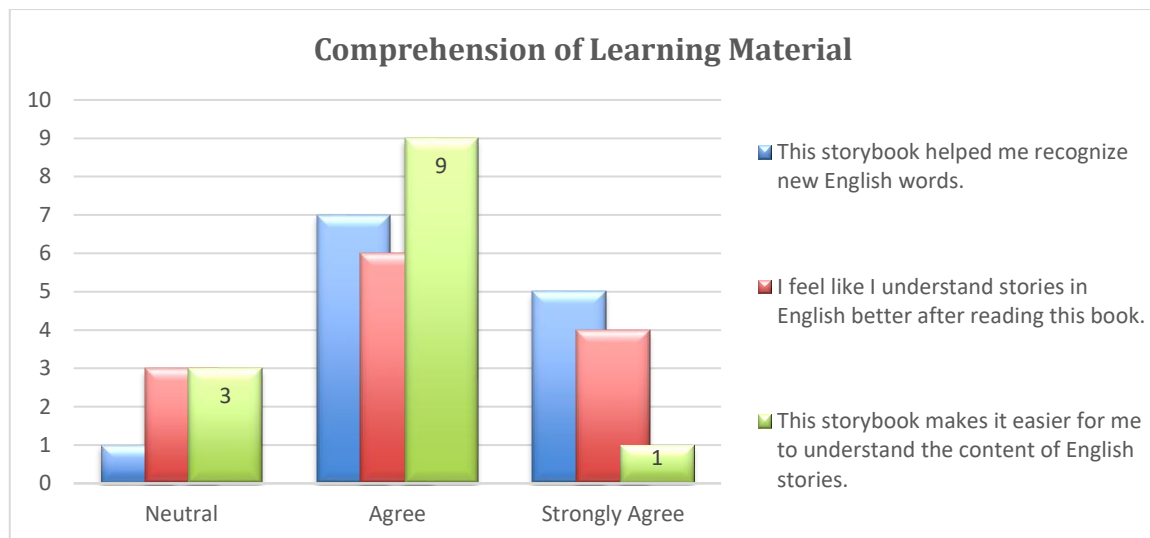


Figure 2. Comprehension of Learning Material

These insights were echoed during classroom observations. It was encouraging to see how confidently most students could answer comprehension questions, often without needing help. They actively participated in in-story quizzes, pointing to pictures or tapping answers on their screens with ease. Yet, there were also moments when some students hesitated usually when they came across longer sentences or abstract terms. In those instances, they seemed to rely on the storybook’s helpful features, like visual cues or audio prompts, to guide them along. It was clear that these tools made a real difference in helping them stay engaged and move forward.

From the teachers' perspectives, the storybook was especially effective for students who learn best through visuals and sounds. The teacher explained it this way: “They really connect with the pictures and sounds. I had a student tell me they remembered the word ‘butterfly’ because they saw it fluttering on the screen while hearing the word at the same time.” Teachers agreed that this multimodal approach worked wonders for many of their students. However, they also pointed out that a few learners needed extra support to fully grasp the content. Some suggested adding features like a built-in glossary or a help button that could offer quick explanations without breaking the flow of the story. They felt this would make the storybook even more accessible, especially for students who might need a little more time or support.

Motivation

Motivation was another area where the storybook excelled. Many students reported feeling more motivated to learn English after using the storybook. Many expressed interest in exploring additional stories, and several students mentioned they preferred this method over traditional classroom exercises. This is indicated by the following questionnaire results.

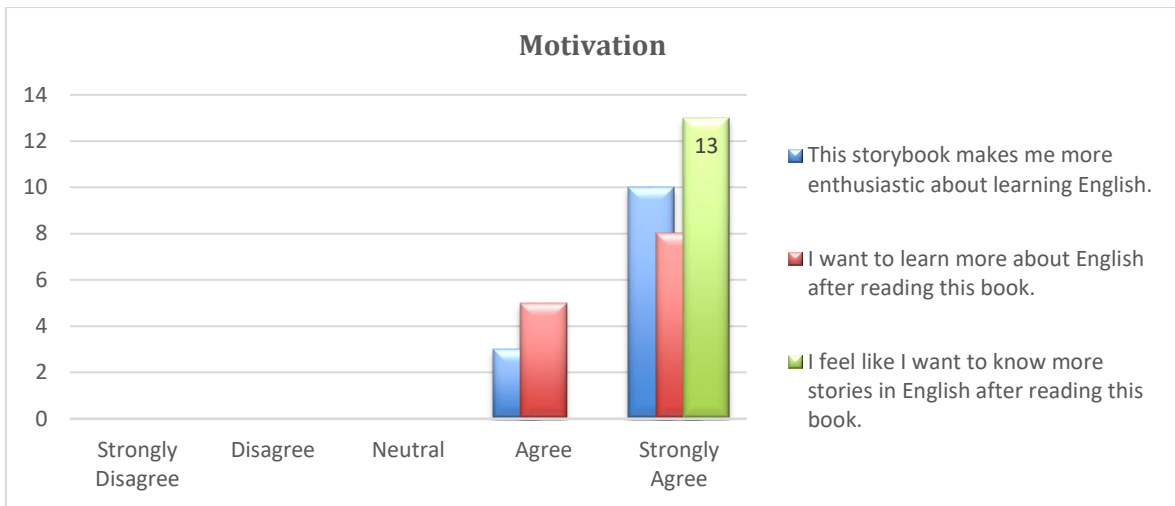


Figure 3. Result of Motivation

Technical Functionality and Usability of Interactive Features

While the Interactive English Story Book was designed to be engaging and educational, its success also depended heavily on how easily students and teachers could interact with it. A digital learning tool may be rich in content, but if it's difficult to navigate or unreliable during lessons, its potential can quickly be undermined. This section highlights how the storybook performed in terms of technical functionality and usability, drawing on insights from student questionnaires, classroom observations, and teacher interviews.

Ease of Use

When asked about how easy the storybook was to use, Students reported a positive experience navigating its features. They appreciated the clear buttons, simple layout, and helpful voice prompts, all of which contributed to making the tool feel intuitive. Many students mentioned that they liked how they could click on icons to hear words pronounced or replay sections they didn't understand the first time. This is indicated by the following questionnaire results.

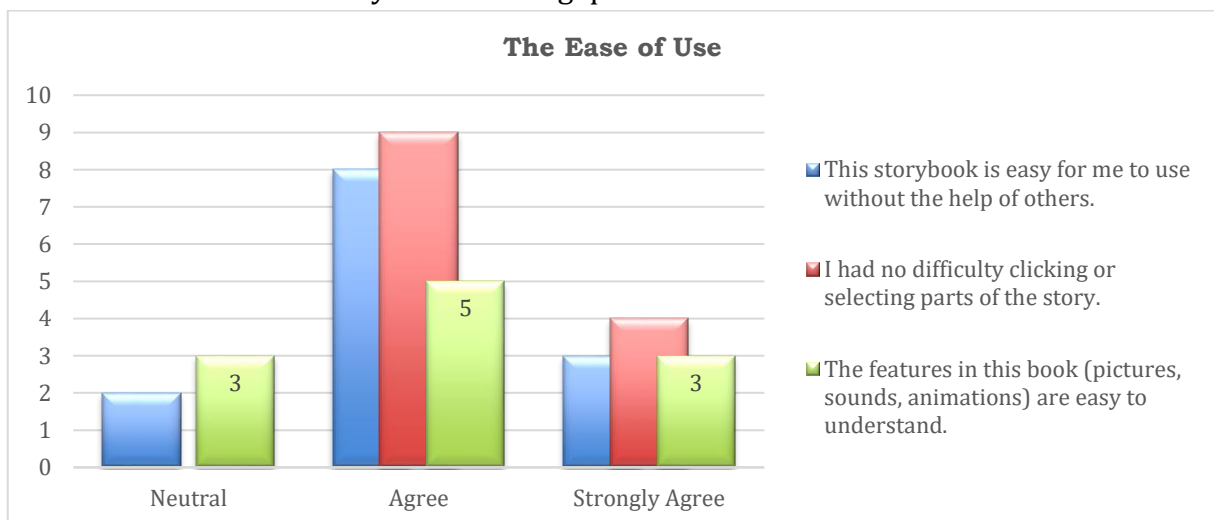


Figure 4. Result of Ease of Use

These positive reports were also reflected in classroom observations, where most students were able to navigate the storybook with minimal help. However, it was noticed that a few younger students or those less familiar with using tablets or computers needed some initial guidance. For instance, some had difficulty locating the interactive buttons or adjusting the audio volume on their

first try. Encouragingly, after a brief demonstration, most students became more confident and navigated through the storybook independently by the second or third session.

Teachers generally agreed that the storybook was intuitive but felt there was room for improvement. Several suggested that including a short tutorial or a guided walkthrough at the start would make the learning process even smoother. As one teacher put it, “Once they got used to it, they were fine, but at the beginning, a simple guide would have made things smoother and helped them dive into the stories right away without waiting for instructions.”

Technical Stability

Technical reliability was another important factor highlighted during the teacher interviews. Most teachers noted that the storybook ran smoothly on the standard devices available at school, with minimal lag or glitches. However, they did point out a potential challenge for schools in more rural areas, where internet connectivity can be inconsistent. Without stable access to the internet, some features of the storybook could be harder to use. Because of this, many teachers recommended that an offline version of the storybook be developed so students could continue learning without needing a constant internet connection. As a teacher noted, “The content is so good, but it would be even better if students in remote areas could download and use it anytime, even when they’re at home without Wi-Fi.”

One of the central aims of this study was to explore whether the Interactive English Story Book aligns with the goals and principles of the Merdeka Belajar curriculum, which emphasizes flexibility, autonomy, and personalized learning tailored to the unique needs of each student. Based on the data gathered from teacher interviews, classroom observations, and student experiences, it was clear that the storybook fits well within the vision of Merdeka Belajar. This section outlines how the digital storybook supports personalized learning, addresses curriculum relevance, and promotes inclusivity and accessibility in the classroom.

Personalized Learning Support

A defining feature of Merdeka Belajar is its commitment to personalized, student-centered learning. The Interactive English Story Book proved to be an effective tool in fostering this kind of learning environment. Teachers observed that the flexibility built into the storybook allowed students to work at their own pace, with some choosing to revisit challenging parts of the story multiple times without feeling rushed or left behind. This was especially important for students who typically struggle in more traditional, one-size-fits-all classroom settings. The teacher remarked, “Some of my students who normally fall behind felt more confident because they could go back and review on their own. They didn’t have to wait for me or feel embarrassed asking the same question twice.” This freedom to self-direct their learning encouraged students to take greater responsibility for their progress, a core aim of Merdeka Belajar.

Additionally, students who advanced more quickly were able to explore further sections or challenge themselves with the storybook’s interactive quizzes and games, while others were free to slow down and absorb the material at a more comfortable pace. This adaptability made the storybook a valuable tool for differentiated instruction in mixed-ability classrooms.

Curriculum Relevance

Teachers also noted that the content within the Interactive English Story Book was well-aligned with the learning objectives outlined in the national curriculum. The vocabulary introduced was

appropriate for the students' grade level, and the stories themselves were structured to support the development of key language skills such as reading comprehension, listening, and basic speaking abilities.

In several interviews, teachers pointed out that the storybook's tasks and exercises echoed the competency-based learning outcomes promoted by Merdeka Belajar. These outcomes focus on mastering practical language skills rather than rote memorization. For example, comprehension questions embedded within the storybook prompted students to think critically about the narrative and apply their understanding of new vocabulary in context skills that are explicitly emphasized in the national curriculum's language education standards.

The teacher stated, "The story content and exercises are spot-on. They support what we're already doing in class and align well with the syllabus we're expected to follow." This alignment not only ensures consistency but also provides teachers with a digital resource that reinforces the themes and language structures they are teaching through other mediums.

Inclusivity and Accessibility

Inclusivity is another pillar of Merdeka Belajar, which seeks to make education accessible to students of all backgrounds and abilities. The storybook demonstrated a strong capacity to support inclusivity through its thoughtful design and built-in accessibility features. For students with reading difficulties, the text-to-speech function was particularly beneficial. Teachers observed that these students were more engaged when they could listen to the story being read aloud while following the highlighted text on the screen. This dual input both visual and auditory helped them grasp the meaning of words more easily and encouraged greater participation in follow-up discussions.

The teacher shared an example, "I have a student who struggles with reading. Usually, he gets frustrated and gives up. But when he listened to the story while watching the animation, he became more confident. He even answered the quiz questions without prompting." This illustrates how accessible design can empower students who might otherwise be marginalized in a conventional learning environment. Moreover, the ability to adjust difficulty levels within the storybook allowed teachers to tailor content for learners at different proficiency levels. More advanced students could be challenged with higher-level tasks, while beginners could engage with simpler language and support features like clickable vocabulary definitions and visual prompts. Teachers also suggested that the storybook's intuitive interface and supportive tools made it a viable learning solution for students with limited exposure to technology. The availability of clear icons, voice prompts, and user-friendly navigation was cited as helping all learners, including those who might not be as digitally literate, engage with the material successfully.

In conclusion, the findings from this study show that the Interactive English Story Book aligns closely with the Merdeka Belajar curriculum in three critical areas: personalized learning, curriculum relevance, and inclusivity. By providing students with the flexibility to learn at their own pace, offering content that meets national curriculum standards, and supporting learners of all abilities, the storybook stands out as a promising tool for modern language instruction. Its integration into classrooms could support the broader goal of Merdeka Belajar, creating a more equitable, student-centered education system that empowers learners to take charge of their learning journey.

Discussion

This study examined the effectiveness of the Intrehension, motivation, usability, inclusivity, and alignment with the Merdeka Belajar curriculum. Overall, the triangulated findings from student

questionnaires, classroom observations, and teacher interviews indicate that the InES Book was positively received as an engaging and accessible learning medium for primary-level English instruction. Students showed visible enthusiasm while interacting with animated illustrations, audio narration, clickable elements, and embedded quizzes. They also reported that these features made English learning more enjoyable and helped them understand story content and unfamiliar vocabulary. Importantly, the findings suggest that the value of the InES Book was not limited to entertainment. The medium appeared to encourage sustained attention, active participation, repeated engagement with learning materials, and greater willingness to respond to English tasks.

The findings also reveal several qualifications. Although most students demonstrated positive comprehension and motivation, some still experienced difficulty with abstract vocabulary, long sentences, and culturally unfamiliar content. Moreover, students with lower English proficiency or limited digital experience required additional guidance during the initial stages of use. The usability data nevertheless indicate that these barriers were temporary for most participants: eleven of the thirteen students completed the sequence of story modules independently, while initial navigation errors declined after students became familiar with the interface. The findings therefore suggest that the InES Book can function as a supportive learning resource when it is accompanied by teacher scaffolding, vocabulary support, and an introductory tutorial. However, because this study was conducted as a small-scale pilot intervention, the findings should be interpreted as evidence of positive learning experiences and practical feasibility rather than definitive causal evidence of improved English achievement.

The positive engagement and motivation observed in this study are consistent with international research on digital storytelling. Roy (2024), for example, found that digital storytelling increased students' motivation, engagement, and understanding in English classrooms compared with conventional instruction. Likewise, Nair and Yunus (2021), in their systematic review, concluded that digital storytelling can support language learning because it combines narrative, visual representation, audio, creativity, and active participation. The present findings align particularly with this literature because students responded favorably to multimodal elements that transformed the English lesson into a more interactive and emotionally positive classroom experience. InES Book appears to have reduced the monotony often associated with textbook-centred instruction by presenting language input through story-based visual and auditory experiences.

Nevertheless, the present study differs from many international studies because the InES Book primarily positioned students as active users of interactive stories rather than as creators of digital stories. Previous research has frequently emphasized student-generated digital storytelling, especially for speaking, writing, creativity, and identity development (Kim & Li, 2021; Nair & Yunus, 2021). In contrast, the present study focused on the instructional value of an interactive storybook designed to support vocabulary recognition, listening, reading comprehension, and learner engagement among younger English learners. This distinction is important because primary school students may require structured digital environments before they are ready to produce complex digital narratives independently. The findings therefore extend the literature by showing that interactive digital storytelling can be pedagogically useful not only as a student-production activity but also as a carefully designed instructional medium for guided language learning.

The comprehension findings can be interpreted through the Cognitive Theory of Multimedia

Learning. According to Mayer (2024), learners process verbal and visual information through partially separate cognitive channels, and meaningful learning occurs when learners select, organize, and integrate relevant information. In the present study, the combination of animated images, text highlighting, pronunciation support, and audio narration appeared to help students connect English words with visual representations and story contexts. For example, students were more able to associate vocabulary with animated objects or actions, making abstract linguistic input more concrete and memorable. However, the difficulties experienced by some students with complex vocabulary and lengthy sentences also reinforce an important principle of multimedia learning: multimedia does not automatically guarantee understanding. When too much information is introduced simultaneously, students may experience unnecessary cognitive load. Therefore, the effectiveness of the InES Book depends on the clarity of visual design, the pacing of narration, the segmentation of story content, and the availability of contextual vocabulary support.

The findings also correspond with Indonesian studies on digital storytelling and English learning. Budianto et al. (2021) reported that Indonesian EFL students perceived digital storytelling as meaningful, enjoyable, and motivating for listening activities. Their study similarly found that story-based audiovisual materials helped students predict word meanings from context, although limited vocabulary remained a challenge. This pattern strongly resembles the present findings, in which students benefited from visual and auditory cues but occasionally required assistance when encountering difficult vocabulary. Likewise, Kodriyah et al. (2025) found that interactive digital storytelling applications supported vocabulary acquisition among young English learners in South Kalimantan. While their quasi-experimental study reported stronger vocabulary outcomes than conventional storytelling, the present study should not make the same causal claim because it did not employ a control group or standardized pre-test and post-test comparison. Instead, the current findings provide complementary evidence regarding students' experiences, usability adaptation, and inclusive participation during the use of an interactive storybook.

The present findings also support Indonesian scholarship emphasising the relevance of digital storytelling for multiliteracy and curriculum-responsive English learning. Dewi et al. (2023) demonstrated that digital storytelling can support multiliteracy-oriented EFL learning by integrating linguistic, visual, cultural, and technological modes of communication. Although their study focused on speaking instruction, its implications are relevant to the InES Book because the medium encourages students to interpret meaning through multiple semiotic resources rather than relying exclusively on printed text. Moreover, the alignment of the InES Book with Merdeka Belajar is consistent with Rohimajaya and Hamer's (2023) argument that English learning in the Merdeka Curriculum should respond to digital transformation, learner diversity, and flexible learning pathways. In this study, students could revisit story sections, replay narration, and proceed at a more individual pace. Such flexibility is particularly relevant in Indonesian primary classrooms, where students often display heterogeneous English proficiency, digital familiarity, and access to learning resources.

Theoretically, the findings support and extend the Cognitive Theory of Multimedia Learning by illustrating how multimodal story-based resources may assist young EFL learners in connecting words, sounds, visuals, and contextual meanings. The study suggests that interactive multimedia can enhance engagement when its elements are instructional rather than merely decorative. Animations, audio narration, quizzes, and text-to-speech functions should therefore be designed as integrated

scaffolds that guide attention toward vocabulary, narrative meaning, and comprehension tasks. Pedagogically, teachers should combine the InES Book with pre-teaching of key vocabulary, brief comprehension prompts, repeated listening opportunities, and guided reflection after each story segment. Teachers should also monitor students who demonstrate low digital confidence or limited English proficiency and provide differentiated support through visual glossaries, simplified vocabulary options, peer assistance, and short orientation sessions before independent use.

The findings also have implications for educational policy. Schools and policymakers should not treat interactive storybooks merely as supplementary digital products; instead, they should consider them as inclusive curriculum resources that require infrastructure, teacher preparation, accessibility standards, and equitable distribution. Offline functionality is particularly important for rural and resource-constrained schools where unstable internet access may limit the continuity of digital learning. Policy should also encourage schools to adopt child-friendly digital platforms that protect learners' privacy and minimize unnecessary exposure to commercial or distracting online content. Although this study did not directly measure mental health, social-media behaviour, or identity formation, the positive classroom atmosphere suggests that carefully mediated digital learning may contribute to a more confident and participatory learning experience. However, claims regarding psychological well-being or online identity require further empirical investigation using dedicated instruments.

The novelty of this study lies in its examination of an interactive English storybook as a curriculum-aligned, multimodal, and inclusive instructional resource for young Indonesian EFL learners. Unlike studies that focus primarily on student-generated digital storytelling or isolated vocabulary outcomes, this study integrates engagement, comprehension, motivation, usability, technical functionality, inclusivity, and curriculum alignment within one triangulated evaluation. The study also contributes practical evidence regarding adaptation time, navigation errors, independent task completion, and differentiated support needs among students with varied English proficiency and digital literacy. Furthermore, the inclusion of detailed observations of two students requiring intensive instructional support demonstrates how text-to-speech, animated illustrations, and adjustable vocabulary levels may reduce learning barriers without relying on clinical labels. Consequently, this study broadens the discussion of digital storytelling from instructional effectiveness alone toward usability, equity, and practical classroom implementation.

Several limitations should be acknowledged. First, the study involved only thirteen students and was conducted over a three-week intervention period; therefore, the findings cannot be generalized to wider Indonesian primary-school populations. Second, the study relied substantially on self-reported perceptions, teacher interviews, and classroom observations, which may be influenced by novelty effects, social desirability, observer interpretation, or teacher expectations. Third, the absence of a control group, standardized achievement measures, and delayed post-tests limits conclusions about the long-term effect of the InES Book on English proficiency. Future research should employ larger multi-school samples across urban, rural, and remote regions; quasi-experimental or mixed-methods designs; validated engagement and digital-literacy instruments; vocabulary and reading-comprehension tests; and delayed retention measures. Subsequent studies should also investigate how interactive storybooks influence students' digital literacy, collaboration, emotional experiences, and responsible online behaviour over a longer period.

Conclusion

The findings demonstrate that the Interactive English Story Book significantly enhances student engagement, motivation, and comprehension of learning materials, thus effectively achieving its pedagogical objectives. Notably, the multimodal features animations, interactive quizzes, and audio narration proved instrumental in captivating students' attention and supporting meaningful vocabulary acquisition and comprehension. This represents a novel contribution to language education by empirically validating the effectiveness of multimodal interactive storybooks in enhancing cognitive and emotional engagement in language learning.

Technically, the study confirmed the high usability and functionality of the storybook. Clear navigation, intuitive interface design, and effective multimedia integration significantly reduced barriers to technology adoption, even among younger learners with limited prior digital exposure. However, recognizing technical accessibility concerns, especially in regions with limited internet connectivity, the study proposed specific enhancements, such as offline functionality, to ensure broader and equitable access.

Crucially, this research confirmed the alignment of the Interactive English Story Book with the Merdeka Belajar curriculum, highlighting its suitability for personalized and flexible learning contexts. It successfully supported differentiated instruction by accommodating diverse proficiency levels and promoting student autonomy essential components of contemporary Indonesian educational policy.

The study's novelty lies in its integrated analytical approach, evaluating pedagogical effectiveness, usability, and curriculum alignment comprehensively, thus extending beyond mere student engagement metrics. The insights gained have significant implications for educators, curriculum developers, and policymakers aiming to optimize technology integration in primary education. Practically, this study guides future development of digital interactive learning resources by emphasizing the necessity for adaptive features, inclusive design, and robust technical functionality.

In conclusion, the Interactive English Story Book emerges as an innovative and pedagogically effective resource, demonstrating substantial promise for wider implementation across diverse Indonesian educational settings. Future research should continue exploring longitudinal impacts and further adaptations to maximize its educational potential and inclusivity.

References

- Alrawashdeh, G. S., Fyffe, S., Azevedo, R. F. L., & Castillo, N. M. (2024). Exploring the impact of personalized and adaptive learning technologies on reading literacy: A global meta-analysis. *Educational Research Review*, 42, Article 100587. <https://doi.org/10.1016/j.edurev.2023.100587>
- Ariyani, N., & Kholidaziya, R. (2024). Implementation of Storybird.AI platform and principles of learning in Merdeka curriculum in teaching writing elementary school. *Proceeding AISELT*, 9(1). <https://jurnal.untirta.ac.id/index.php/aiselt/article/view/28892>
- Astuti, M., Ismail, F., Fatimah, S., Puspita, W., & Herlina, H. (2024). The relevance of the Merdeka Curriculum in improving the quality of Islamic education in Indonesia. *International Journal of Learning, Teaching and Educational Research*, 23(6), 56–72. <https://doi.org/10.26803/ijlter.23.6.3>
- Barkley, E. F., & Major, C. H. (2020). *Student engagement techniques: A handbook for college faculty* (2nd ed.). Jossey-Bass.
- Bernacki, M. L., Greene, M. J., & Lobczowski, N. G. (2021). A systematic review of research on personalized learning: Personalized by whom, to what, how, and for what purpose(s)? *Educational Psychology Review*, 33(4), 1675–1715. <https://doi.org/10.1007/s10648-021-09615-8>
- Braun, V., & Clarke, V. (2021). *Thematic analysis: A practical guide*. SAGE.

- Budianto, L., Azmi, M., & Putera, A. A. (2021). The implementation of digital storytelling using discovery learning in EFL listening class: Middle school students' and teachers' voices. *Journal on English as a Foreign Language*, 11(2), 381–399. <https://doi.org/10.23971/jefl.v11i2.3036>
- Carrete-Marín, N., Domingo-Peñafiel, L., & Simó-Gil, N. (2024). Teaching materials for rural schools: Challenges and practical considerations from an international perspective. *International Journal of Educational Research Open*, 7, Article 100365. <https://doi.org/10.1016/j.ijedro.2024.100365>
- Cohen, L., Manion, L., & Morrison, K. (2017). *Research methods in education* (8th ed.). Routledge.
- Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research* (3rd ed.). SAGE.
- Deci, E. L., & Ryan, R. M. (Eds.). (2004). *Handbook of self-determination research*. University of Rochester Press.
- Dewi, D. S., Hartono, R., Saleh, M., & Wahyuni, S. (2023). Incorporating multiliteracy pedagogy elements into EFL speaking class through digital storytelling. *Issues in Language Studies*, 12(2), 79–97. <https://doi.org/10.33736/ils.5545.2023>
- Drigas, A., & Mitsea, E. (2021). 8 pillars × 8 layers model of metacognition: Educational strategies, exercises, and trainings. *International Journal of Online and Biomedical Engineering*, 17(8), 115–134. <https://doi.org/10.3991/ijoe.v17i08.23563>
- Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*, 5(1), 1–4. <https://doi.org/10.11648/j.ajtas.20160501.11>
- Gomm, R., Hammersley, M., & Foster, P. (Eds.). (2000). *Case study method: Key issues, key texts*. SAGE. <https://doi.org/10.4135/9780857024367>
- Grissom, J. A., & Youngs, P. (2016). *Improving teacher evaluation systems: Making the most of multiple measures*. Teachers College Press.
- Hakim, A., & Wahyuni, S. (2024). A critical review: Technology as learning media in teaching reading. *J-SHMIC: Journal of English for Academic*, 11(1), 77–83. [https://doi.org/10.25299/jshmic.2024.vol11\(1\).15830](https://doi.org/10.25299/jshmic.2024.vol11(1).15830)
- Hojeij, Z., Tamim, R., Kaviani, A., & Papagianni, C. (2021). E-books and digital storytelling for Emirati school children: Project-based learning for pre-service teachers. *Issues in Educational Research*, 31(4), 1067–1087. <https://www.iier.org.au/iier31/hojeij3-abs.html>
- Kim, D., & Li, M. (2021). Digital storytelling: Facilitating learning and identity development. *Journal of Computers in Education*, 8, 33–61. <https://doi.org/10.1007/s40692-020-00170-9>
- Kodriyah, L., Islamiah, N., & Hengki. (2025). The impact of interactive digital storytelling apps on English vocabulary acquisition for young English learners in South Kalimantan, Indonesia. *Intensive Journal*, 8(1), 26–42. <https://doi.org/10.31602/intensive.v8i1.17973>
- Li, H., Zhang, T., Woolley, J. D., An, J., & Wang, F. (2023). Exploring factors influencing young children's learning from storybooks: Interactive and multimedia features. *Journal of Experimental Child Psychology*, 233, Article 105680. <https://doi.org/10.1016/j.jecp.2023.105680>
- Li, M. (2025). Impact of multimodal learning environments on cognitive and emotional development in students. *Journal of Computational Methods in Sciences and Engineering*. Advance online publication. <https://doi.org/10.1177/14727978251363052>
- Mayer, R. E. (2020). *Multimedia learning* (3rd ed.). Cambridge University Press.
- Mayer, R. E. (2024). The past, present, and future of the cognitive theory of multimedia learning. *Educational Psychology Review*, 36, Article 8. <https://doi.org/10.1007/s10648-023-09842-1>
- Nair, V., & Yunus, M. M. (2021). A systematic review of digital storytelling in improving speaking skills. *Sustainability*, 13(17), Article 9829. <https://doi.org/10.3390/su13179829>
- Ong, C., & Aryadoust, V. (2023). A review of digital storytelling in language learning in children: Methods, design, and reliability. *Research and Practice in Technology Enhanced Learning*, 18, Article 11. <https://doi.org/10.58459/rptel.2023.18011>
- Palioura, M., & Dimoulas, C. (2022). Digital storytelling in education: A transmedia integration approach for the non-developers. *Education Sciences*, 12(8), Article 559. <https://doi.org/10.3390/educsci12080559>
- Pen, S., & Singh, P. (2025). A comparative analysis of traditional and interactive teaching methods in English. *International Journal of Research in English*, 7(1), 625–629. <https://doi.org/10.33545/26648717.2025.v7.i1j.399>
- Petousi, D., Katifori, A., Servi, K., Roussou, M., & Ioannidis, Y. (2022). History education done different: A collaborative interactive digital storytelling approach for remote learners. *Frontiers in Education*, 7,

Article 942834. <https://doi.org/10.3389/feduc.2022.942834>

- Putri, A., As'ari, A. R., Purwanto, P., Osman, S., & Kharis, S. A. A. (2024). Teachers underutilize their learning styles in developing thought-provoking questions: A case study. *European Journal of Educational Research*, 13(2), 479–495. <https://doi.org/10.12973/eu-jer.13.2.479>
- Rajendran, V., & Yunus, M. M. (2021). Interactive learning via digital storytelling in teaching and learning. *International Journal of Education and Literacy Studies*, 9(3), 78–84. <https://doi.org/10.7575/aiac.ijels.v.9n.3p.78>
- Rincón-Flores, E. G., Castaño, L., Guerrero Solís, S. L., Olmos López, O., Rodríguez Hernández, C. F., Castillo Lara, L. A., & Aldape Valdés, L. P. (2024). Improving the learning-teaching process through adaptive learning strategy. *Smart Learning Environments*, 11(1), Article 27. <https://doi.org/10.1186/s40561-024-00314-9>
- Rochmiyati, S., Tiasari, L., & Ermawati. (2024). Promoting character education through genre-based language learning: A digital reading box in the spotlight. *Theory and Practice in Language Studies*, 14(3), 813–820. <https://doi.org/10.17507/tpls.1403.23>
- Rohimajaya, N. A., & Hamer, W. (2023). Merdeka curriculum for high school English learning in the digital era. *KLAUSA: Kajian Linguistik, Pembelajaran Bahasa, dan Sastra*, 7(1), 1–8. <https://doi.org/10.33479/klausu.v7i1.673>
- Roy, A. (2024). Impact of digital storytelling on motivation in middle school English classrooms. *International Journal of Computer-Assisted Language Learning and Teaching*, 14(1), 1–20. <https://doi.org/10.4018/IJCALLT.353434>
- Rutta, C. B., Schiavo, G., Zancanaro, M., & Rubegni, E. (2021). Comic-based digital storytelling for content and language integrated learning. *Educational Media International*, 58(1), 21–36. <https://doi.org/10.1080/09523987.2021.1908499>
- Shaturaev, J. (2021). Education in Indonesia: Financing, challenges of quality and academic results in primary education. *Kokand University Herald*, 6, 57–65. <https://doi.org/10.54613/001003>
- Taylor, D. L., Yeung, M., & Basset, A. Z. (2021). Personalized and adaptive learning. In J. Ryoo & K. Winkelmann (Eds.), *Innovative learning environments in STEM higher education* (pp. 17–34). Springer. https://doi.org/10.1007/978-3-030-58948-6_2
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.