



The Impact of Educational Technology on Behavioural Engagement in English Learning

(A Systematic Literature Review)

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Abstract. This systematic literature review analyzes previous studies on impact of educational technology on students' behavioural engagement in English language learning. The integration of educational technology in English classroom has increased significantly in order to address students' low participation, limited attention, and passive learning behaviour. Various digital tools such as digital storybooks, digital storytelling, multimedia learning platforms, and interactive online applications have been implemented to promote students' active participation. This review followed the preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework to ensure a systematic and transparent review process. Relevant journal articles published between 2020 until 2025 were identified through Google Scholar, ResearchGate, and Publish or Perish. A total of 15 articles met the conclusion criteria and were analysed in this study. The findings indicate that educational technology positively influences students' behavioural engagement, which is reflected in increased participation, attention, interaction, and task completion in English learning contexts. The review highlights that the appropriate intergration of educational technology can support more interactive and learner-centred English language learning environments.

Keywords: Behavioural Engagement; Digital Learning Tools; Educational Technology; English Language Learning; Interactive Learning.

1. INTRODUCTION

In the era of rapid technological advancement, education has undergone significant transformation through the integration of various digital tools to support teaching and also learning processes. In English language learning, educational technology has increasingly been adopted to address persistent challenges such as students' low participation, limited attention and passive classroom behaviour (Alfiah et al., 2024). Traditional English instruction which often relies on textbook-based and teacher-centred approaches has been found insufficient in fostering students' active engagement, particularly in reading and language practice activities (OECD, 2022). As a result, enhancing students' behavioural engagement has become a critical concern in English language education. Behavioural engagement refers to students' observable participation in learning activities, including attention, involvement, interaction, and task completion (McGeown & Smith, 2024).

In English language learning contexts, behavioural engagement plays a crucial role in supporting language acquisition, as active participation enables learners to practice language skills, respond to instructional input, and interact meaningfully with learning materials. Several studies have highlighted that students who demonstrate higher behavioural engagement tend to show better comprehension, motivation, and learning persistence in language classrooms

(McGeown & Smith, 2024). Educational technology offers promising opportunities to enhance behavioural engagement in English language learning. Digital learning tools such as digital storybooks, digital storytelling, multimedia applications, and interactive platforms provide multimodal learning experiences that combine text, visuals, audio, and interactivity. According to Mayer & Fiorella, (2021), multimedia learning environments support deeper cognitive processing by engaging multiple sensory channels, which can increase students' attention and participation. In English classrooms, digital storybooks and digital storytelling have been widely used to support reading comprehension, vocabulary development, and learner motivation through visually supported and context-rich narratives (Robin, 2016). Empirical evidence further indicates that story-based instructional media significantly improve students' reading competence and simulate their active involvement in reading activities (Ratminingsih et al., 2020).

Recent studies indicate that the use of educational technology positively influences students' behavioural engagement in English language learning. Digital storytelling has been shown to encourage students' active involvement in speaking and reading activities by allowing learners to interact with content, express ideas, and collaborate with peers (Okur, 2021). Similarly, task-based e-learning environments have been found to significantly enhance students' reading engagement by encouraging consistent participation and active task completion during English learning (Sudatha, et al., 2024). Digital storybooks enhance students' engagement by providing interactive features such as animations, narration, and clickable elements, which help maintain learners' focus and participation during English reading activities (Nazimuddin et al., 2023). These interactive elements make learning experiences more enjoyable and learner-centred, especially for young learners and EFL students. In addition, gamification-based adaptive mobile learning systems have been reported to increase students' motivation and sustained behavioural participation in English classrooms (Jayanta, et al., 2025). Despite the growing body of research on educational technology in English language learning, existing studies remain scattered across different technological tools and learning contexts. While some research focuses on digital storybooks, others examine multimedia learning, online platforms, or digital storytelling without systematically synthesizing their contributions to students' behavioural engagement. Furthermore, many studies are conducted in EFL contexts, yet their findings are not consistently integrated to provide a comprehensive understanding of how educational technology enhances behavioural engagement in English language learning (Net et al., 2024). The teaching and learning process is also carried out from home, this requires assistance from technology and this changes

students' learning habits (Wiranatha & Santosa, 2025). Therefore, a systematic synthesis of recent empirical studies is necessary to identify patterns, dominant findings, and research gaps.

To address this need, this study conducts a Systematic Literature Review (SLR) guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework. This review aims to synthesize recent research published between 2021-2026 on the impact of educational technology to enhance students' behavioural engagement in English language learning. By systematically analyzing relevant studies, it aims to highlight the ways in which digital tools promote active participation, attention, and interaction in learning contexts. Accordingly, the central research question guiding this systematic literature review is How does the use of educational technology enhance students' behavioral engagement in English language learning?

2. RESEARCH METHODOLOGY

This study used a Systematic Literature Review (SLR) to identify and analyze previous studies on the use of educational technology to enhance students' behavioral engagement in English language learning. This method was chosen to collect, evaluate, and summarize relevant research in order to achieve the objectives of the review. The data were collected from national and international journal articles published between 2021-2026, following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. The literature search was conducted using Google Scholar, ResearchGate, and Publish or Perish with keywords such as "educational technology", "behavioral engagement in English learning", "digital tools for English learning", "students' participation in EFL classrooms", and "technology-enhanced language learning". Studies were included if they focused on how educational technology supports students' active participation, attention, and interaction in English learning contexts. The PRISMA flowchart guided the process of identifying, screening, and selecting studies that met the criteria. Initially, 30 journal articles were collected, and 15 were finally selected based on their relevance to educational technology, behavioral engagement, and English language learning.

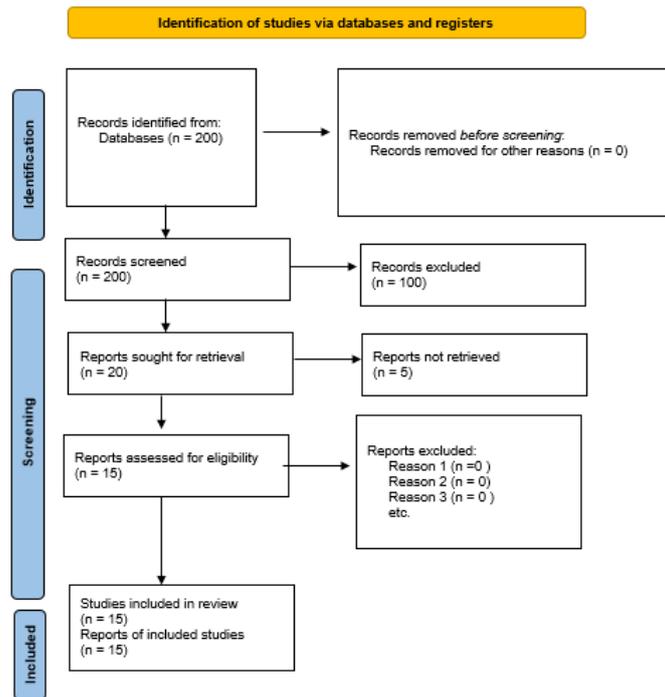


Figure 1. The Prisma Table.

To select the relevant articles, authors establish inclusion and exclusion criteria as follows:

Table 1. Inclusion and Exclusion Criteria.

Inclusion criteria	Exclusion criteria
Studies focusing on the use of educational technology in English language learning, including digital tools, online platforms, or applications.	Studies using technology but not related to English language learning
Studies examining students' behavioral engagement, including participation, attention, interaction, or motivation in English learning contexts.	Studies that do not address behavioral engagement in learning, such as studies focusing only on cognitive outcomes or test scores.
Must be empirical research Published in the year of 2020-2025	Non-empirical research Published in the year of 2020-2025

3. RESULT AND DISCUSSION

The researchers identified 15 journal articles that met the selection criteria through a systematic literature review. The selected studies examine the use of educational technology to enhance students' behavioural engagement in English language learning. Overall, the findings indicate that educational technology contributes positively to students' participation, attention, interaction, and involvement in English learning activities. Several studies report that digital

platforms, multimedia learning tools, and AI-assisted applications help students remain actively engaged during learning processes. For instance, Widiantari et al. (2024) found that the use of WhatsApp as an online learning platform supported students' active participation during distance learning. This finding reinforces the idea that accessible and familiar digital platforms can reduce students' hesitation to participate, thereby increasing observable classroom interaction and task involvement.

Similarly, Nazimuddin et al. (2023), Mynaryathy and Wijayanti (2023) reported that multimedia features such as visuals, narration, and interactive elements helped maintain students' attention and interest in learning activities. The study highlights that interactive multimedia features, such as animated visuals, synchronized narration, and engaging storylines, helped sustain students' attention during English reading tasks. From a behavioural engagement perspective, increased interest and self-efficacy are closely associated with students' willingness to participate, complete assignments, and remain focused throughout the learning process. This suggests that multimedia-based educational technology does not merely support comprehension but also strengthens observable engagement behaviours, such as active reading, responding to prompts, and completing digital tasks. However, the studies discussed above represent only a portion of the broader body of research examining how educational technology influences students' behavioural engagement in English language learning contexts. A wider range of empirical studies further investigates different technological tools, instructional strategies, and classroom settings that contribute to observable student participation and interaction.

Table 2. The Overview of Related Study.

No	Author	Year	Context	Findings
1	Wirasatya, Artini, & Wahyuni	2021	Indonesia	WhatsApp was fully used as e-learning platform during distance learning due to limited student facilities and poor internet connection. It was effective for delivering materials and conducting assessments.
2	Okur	2021	Turkey	Digital storytelling improved students' digital literacy skills. It supported active participation in technology-based English learning environments.
3	Mayer & Fiorella	2021	Global	Multimedia learning improved students' comprehension. Improved comprehension supported attention and engagement during learning.
4	Pasaka et al.	2022	Indonesia	Storybook design supported students' awareness through contextual and meaningful content.

5	Nazimuddin et al.	2023	Indonesia	It encouraged students to engage more actively in reading activities. Digital picture books increased students' learning interest and self-efficacy. Visual and interactive features supported active engagement in English learning.
6	Mynaryathy & Wijayanti	2023	Indonesia	Digital storybooks enhanced values learning in English classrooms. They helped students engage more deeply with learning materials.
7	Shabiriani et al.	2023	Indonesia	Visual narratives helped increase students' reading enjoyment. This contributed to sustained attention and behavioural engagement.
8	Nizma & Kusumawardani	2023	Indonesia	Reading engagement was influenced by the use of contextual texts. Relevant learning content encouraged active participation in reading activities.
9	Yasa, Padmadewi, & Dewi	2023	Indonesia	Technology-Based Project-Based Learning requires a conceptual framework for implementation. Lecturers were pedagogically ready but lacked guidance. Students needed better readiness due to diverse English proficiency levels.
10	McGeown & Smith	2024	UK	Reading engagement was found to increase students' comprehension. Higher engagement levels were associated with improved understanding of reading texts and learning outcomes.
11	Damayanti & Santosa	2024	Indonesia	ProWritingAid effectively improved grammar, spelling, sentence structure, and overall writing quality. It reduced writing anxiety and promoted independent learning among EFL students
12	Budiarta & Kusuma	2024	Indonesia	ChatGPT failed to significantly improve EFL preservice teachers' teaching plans compared to control group. Plans created with ChatGPT were not superior when not properly reviewed and adapted
13	Santosa & Yasa	2025	Indonesia	EFL students' satisfaction in online learning was influenced by six factors: facilities, flexibility, interaction, instructor quality, learning outcomes, and learning environment.
14	Perea & Gochuico	2025	Philippines	Digital storytelling enhanced student motivation, engagement, critical thinking, creativity, and collaboration. It promoted both cognitive and affective learning outcomes in English communication classes.
15	Puspitasari, Widiarti, & Subali	2025	Indonesia	Digital storytelling through flipbooks, animated videos, and

web-based	tools	improved
elementary	students'	reading
interest,	idea	articulation,
conceptual	understanding,	critical
thinking,	and media	literacy,
creating	meaningful	multimodal
learning	experiences.	

This systematic literature review examines the impact of educational technology on students' behavioural engagement in English language learning using the PRISMA framework. The findings indicate that educational technology influences multiple observable dimensions of behavioural engagement, including participation, sustained attention, interaction, and self-regulated involvement in learning tasks. Across the reviewed studies, engagement is reflected not merely in students' perceptions, but in measurable behavioural indicators such as task completion, response frequency, interaction patterns, and on-task behaviour. The reviewed studies demonstrate that educational technology supports active participation in English learning. Widiantari et al. (2024) reported that the use of WhatsApp as an e-learning platform enabled students to remain engaged during distance learning. Features such as group communication, assignment submission, and teacher feedback encouraged consistent participation, even in contexts with limited facilities. Importantly, participation was reflected in students' regular submission of tasks and active involvement in discussion threads, indicating observable behavioural engagement rather than passive attendance.

Similarly, Pramudita, (2023) found that the use of Quizizz in EFL classrooms significantly increased students' active participation through real-time quiz responses and competitive game-based elements. The structured and time-bound format required students to respond immediately, reducing disengagement and increasing on-task behaviour. This suggests that gamified digital tools can create behavioural accountability, where students' participation becomes visible and measurable. In the Indonesian context, Cahyono (2024) further reported that the integration of LMS platforms and mobile-based learning tools contributed to higher levels of behavioural engagement, particularly in classroom participation and task completion rates. Their findings indicate that when digital platforms are systematically integrated into instructional design, students demonstrate more consistent involvement in learning activities. This highlights that engagement is not solely driven by the presence of technology, but by how it structures and organizes students' learning behaviours.

Several studies highlight the role of multimedia and interactive technologies in sustaining students' attention. Shabiriani et al. (2023) found that digital storybooks and visual narratives increased students' focus through images, narration, and animations. These

multimodal elements minimized distraction and encouraged students to remain cognitively and behaviourally engaged during reading tasks. Sustained attention was reflected in longer reading duration and reduced off-task behaviour. Supporting this perspective, Mayer and Fiorella (2021) emphasized that multimedia learning environments enhance attention and comprehension when visual and verbal elements are coherently designed. This theoretical foundation strengthens the empirical findings by explaining why structured multimedia content can maintain students' engagement behaviours. In line with this, Irzawati (2020) reported that the use of LMS, WhatsApp, and Google Meet created more dynamic classroom interaction, encouraging students to respond more actively and remain attentive during English lessons. The integration of synchronous and asynchronous tools appeared to reduce passive learning tendencies and increase behavioural involvement.

Educational technology also promotes interaction and collaborative learning behaviours. (Pasaka et al., 2022), Perea and Gochuico (2025) and Puspitasari et al. (2025) reported that digital storytelling and technology-based activities encouraged interaction among students and between students and learning materials. Such interaction required learners to exchange ideas, negotiate meaning, and actively manipulate digital content, all of which represent observable engagement behaviours. In line with this, Qatrunnida and Ardini (2023) found that online writing coursework facilitated sustained interaction and task persistence, particularly through structured peer feedback and iterative revision processes. The digital environment encouraged continuous participation, as students were required to respond to comments and revise their work accordingly. This demonstrates that behavioural engagement can be sustained when technology supports ongoing task interaction rather than one-time submission.

In addition, several studies indicate that educational technology supports independent and self-regulated learning behaviours. Damayanti and Santosa (2024) found that ProWritingAid encouraged students to actively revise their writing and monitor grammatical accuracy, shifting students from passive writers to active self-editors. This reflects behavioural engagement through repeated interaction with learning content. Similarly, Santosa (2022) showed that engagement in online English learning was influenced by interaction quality, flexibility, and instructional support, suggesting that structured guidance enhances students' consistent involvement. However, the findings also reveal important limitations. Budiarta and Kusuma (2024) reported that the use of ChatGPT did not significantly improve preservice teachers' teaching plans when the generated output was not critically evaluated. This indicates that technology use without reflective engagement may lead to superficial behavioural

involvement. Agus et al. (2023) also highlighted that differences in students' proficiency levels and digital readiness influenced their engagement, suggesting that behavioural engagement is moderated by learner characteristics and contextual readiness.

Overall, the reviewed studies consistently demonstrate that educational technology enhances students' behavioural engagement in English language learning when it promotes active participation, sustained attention, interactive collaboration, and structured task involvement. The effectiveness of technology, therefore, lies not merely in its availability but in its capacity to shape and sustain observable engagement behaviours throughout the learning process. Across diverse instructional contexts, engagement emerges when digital tools are purposefully aligned with pedagogical objectives and learner needs. The findings also suggest that behavioural engagement functions as a dynamic process influenced by interaction design, feedback mechanisms, and task structure within digital environments. Rather than acting as an isolated variable, technology operates as a mediating factor that facilitates students' active involvement in language learning activities. Consequently, strategic integration of educational technology is essential to ensure that engagement is maintained consistently across different English learning settings.

4. CONCLUSION AND SUGGESTION

This systematic literature review synthesizes empirical evidence published between 2020 and 2025 concerning the role of educational technology in fostering students' behavioural engagement in English language learning. The overall pattern across the reviewed studies indicates that educational technology contributes to observable engagement behaviours, particularly through increased participation, sustained attention, interactive collaboration, and structured task involvement. Rather than serving merely as supplementary tools, digital platforms, multimedia resources, digital storytelling, and AI-assisted applications function as mechanisms that shape how students actively engage in English learning activities. The findings further suggest that technology-enhanced environments can facilitate independent learning behaviours and reduce learning-related anxiety when supported by clear instructional design and appropriate pedagogical guidance. However, the degree to which behavioural engagement is strengthened depends on contextual factors, including teacher facilitation, technological integration strategies, and learners' digital readiness.

In conclusion, educational technology holds substantial potential to enhance behavioural engagement in English language learning when implemented in a pedagogically informed and context-sensitive manner. To optimize this potential, educators are encouraged

to integrate technology through interactive learning activities such as collaborative digital tasks, multimedia based language practice, and AI-assisted feedback that promote active student participation. Teachers should also receive continuous professional development to strengthen their digital pedagogical competencies and ensure that technological tools are aligned with clear learning objectives. Future research may extend this body of knowledge by examining specific technological interventions across varied educational settings and exploring their sustained impact on students' long-term engagement patterns.

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