ENGAGING SENIOR HIGH SCHOOL STUDENTS IN READING COMPREHENSION THROUGH THE BEELINGUAPP TOOL: A CASE STUDY

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ABSTRACT

Reading comprehension is a crucial skill for those learning English. However, many learners of English as a Foreign Language (EFL) struggle due to limited vocabulary, lack of motivation, and insufficient involvement during reading tasks. The rise of educational technology has introduced digital applications that can enhance students' reading experiences through multimodal learning environments. This study aimed to investigate how senior high school students engage with reading comprehension while using Beelinguapp and to analyze their behavioral, emotional, and cognitive responses when utilizing the application. A qualitative case study approach was used, involving eleventh-grade students from a senior high school in Indonesia. Data were gathered through classroom observations, semi-structured interviews, student journals, and field notes. The collected information was analyzed using the interactive model developed by Miles, Huberman, and Saldaña, which includes data condensation, data display, and drawing and verifying conclusions. The findings indicated that students displayed positive engagement in behavioral, emotional, and cognitive aspects. Behaviorally, they actively interacted with audio narration, bilingual texts, and vocabulary features. Emotionally, students expressed heightened interest, enjoyment, confidence, and motivation while reading English texts. Cognitively, they applied various strategies for comprehension, such as rereading, listening to audio repetitions, checking translations, and reinforcing vocabulary through flashcards and games. The results imply that Beelinguapp offers a supportive and engaging learning platform that enhances reading comprehension and fosters meaningful student involvement.

Keywords: student engagement, reading comprehension, Beelinguapp, EFL learners, educational technology

A. Introduction

The ability to understand English reading texts remains one of the main challenges for many students in Indonesia. Although reading is an important skill in language learning, many students have not shown high interest or active involvement in classroom reading activities. They often read because a task requires it, not because they have a genuine intention to understand the content. This condition appears in students' tendency to become bored when they face long texts and in their difficulty answering comprehension questions

after reading. The reading process, which should be active and meaningful, often becomes passive and procedural.

Large-scale literacy data strengthen this concern. The Programme for International Student Assessment reported that Indonesian students' reading literacy score in 2018 reached only 371, far below the OECD average of 487 (OECD, 2019). A World Bank brief also reported that around 70% of Indonesian students failed to reach Level 2, which indicates difficulty identifying main ideas and understanding explicit information in texts (World Bank, 2020). These data show that many students still have inadequate reading skills, particularly in critical and in-depth comprehension.

Reading comprehension problems are not limited to linguistic aspects. They also relate to the degree to which students engage in the reading process. Many students tend to be passive and unmotivated, especially when reading instruction relies on conventional activities, such as reading long texts without visual, audio, or interactive support. Budianto, Yuniar, and Rohmana (2025) found that low motivation and limited student involvement remain major challenges in teaching reading comprehension in Indonesia. Rahma, Andayani, and Anindyarini (2024) also reported that many Indonesian teachers perceive the lack of digital reading models and students' low motivation as significant obstacles in teaching reading in the digital era. These findings indicate that engagement in reading involves cognitive ability, affective response, and the learning experience itself.

The learning method used by teachers strongly influences student engagement. Teacher-centered and monotonous approaches often reduce enthusiasm and cause students to lose attention. Manurung, Misrah, and Marpaung (2024) show that less varied instructional methods can limit the development of reading skills. In contrast, interactive methods can increase students' interest and understanding of texts. In many Indonesian classrooms, the use of technology remains uneven, and students often struggle to maintain attention on long English texts without interactive support. This situation highlights the need for reading instruction that is more engaging, flexible, and relevant to students' digital learning habits.

One promising alternative is the use of Beelinguapp. This mobile application provides bilingual texts, audio narration, translation support, and vocabulary-related features. The combination of text and audio allows students to read while listening, compare English and Indonesian meanings, and repeat difficult sections. Such multimodal features align with Mayer's Cognitive Theory of Multimedia Learning, which explains that learning can become more effective when information is delivered through visual and auditory channels (Mayer, 2020). In reading instruction, the application can function as a supplementary tool rather than a replacement for teacher guidance.

Previous studies have shown that Beelinguapp can improve reading comprehension scores. Herminingsih, Isro'iyah, and Mukti (2024) reported that students' reading comprehension improved after the implementation of a language learning application. Mukti, Sari, Sutanti, and Primasari (2025) also found a significant improvement in senior high school students' reading comprehension after using Beelinguapp. Silfani, Wijayadi, and Ro'ifah (2024) recorded a positive effect of the SQ3R method using Beelinguapp on literal reading comprehension. However, these studies mainly emphasize measurable improvement. They do not sufficiently explain how students experience the application during reading or how their behavioral, emotional, and cognitive engagement appears in real classroom contexts.

Based on these problems and gaps, this study explores how senior high school students engage in reading comprehension through Beelinguapp. It focuses on two research questions: how students engage in reading comprehension through the use of Beelinguapp, and what behavioral, emotional, and cognitive responses students show while using the application for reading English texts. The study uses Fredricks, Blumenfeld, and Paris' (2004) theory of student engagement to examine behavioral, emotional, and cognitive engagement, and it uses Mayer's multimedia learning theory to explain the pedagogical relevance of audio-text integration in digital reading activities.

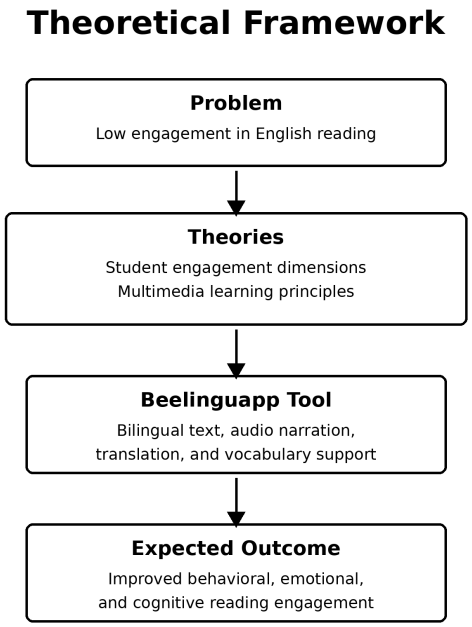


Figure 1. Theoretical framework of the study

B. Research Method

This research employed a qualitative method with a case study approach. A case study design was selected because it allows the researcher to investigate a phenomenon deeply within a specific context, namely senior high school students' engagement in reading through Beelinguapp. Creswell and Poth (2018) explain that a qualitative case study aims to gain detailed understanding of a problem, event, or experience in a real-life setting. This design fits the purpose of the present study, which does not seek statistical generalization but aims to understand students' experiences and responses during technology-assisted reading activities.

The case study approach also suits the research questions, which focus on how students engage in reading and how their behavioral, emotional, and cognitive responses emerge. Yin (2018) states that case studies are effective when researchers ask how and why questions related to a phenomenon in context. Through this design, the researcher could examine reading activities, student interaction with the application, and the meanings students attached to their learning experience.

The study was conducted at a senior high school in Karawang that allowed the use of digital applications in English learning. This site was selected purposively because it matched the research focus. The participants were eleventh-grade students who were willing to use Beelinguapp during English reading activities. Participant selection used purposive sampling. The criteria included access to mobile devices, willingness to participate, and readiness to engage with the application during the research period. In qualitative research, participant selection emphasizes information-rich

cases rather than large numbers of respondents (Patton, 2015).

The instructional procedure consisted of several organized phases. First, the researcher obtained permission from the school and explained the research aims to the English teacher and school authorities. The researcher then conducted preliminary observation to understand classroom conditions, students' characteristics, and the usual reading activities. Second, students were introduced to Beelinguapp and guided to access bilingual texts, use audio narration, and explore vocabulary features. The reading activities were conducted in two to three meetings, with each meeting lasting approximately 60 minutes according to the school schedule.

During the reading sessions, students read English texts through the application while using the features that supported their comprehension. They could listen to audio narration, compare English and Indonesian text, repeat difficult sections, and check vocabulary. The application was positioned as a supplementary learning aid, not as the main instructional method. The teacher and researcher still guided the learning activity, while students were encouraged to explore the application independently according to their reading needs.

Data were collected through observation, semi-structured interviews, student journals, and field notes. Observation was used to record students' behavioral, emotional, and cognitive engagement during reading activities. The observation focused on indicators such as attention, participation, interaction with application features, persistence in completing reading tasks, visible interest, and strategies used to understand the text. Field notes were written systematically to capture classroom situations, non-verbal expressions, and contextual details that might not appear in interviews.

Semi-structured interviews were conducted with selected students to explore their experiences and perceptions more deeply. The interview questions were open-ended so that students could explain how they used the application, what difficulties they faced, which features helped them, and how they felt during reading activities. Kallio et al. (2016) argue that semi-structured interviews are suitable for qualitative studies because they combine a clear research focus with

flexibility to probe relevant responses. Student journals were also analyzed to understand students' reflections after reading through Beelinguapp.

The instruments used in this research included an observation guide, a semi-structured interview guide, field notes, and student journal prompts. The observation guide was developed based on the three dimensions of engagement proposed by Fredricks et al. (2004): behavioral, emotional, and cognitive engagement. The interview guide explored students' views on reading activities, the usefulness of Beelinguapp features, motivation, confidence, and strategies for comprehension. These instruments helped the researcher maintain consistency and accuracy during data collection.

Data were analyzed using the interactive model of Miles, Huberman, and Saldaña (2019), which consists of data condensation, data display, and conclusion drawing or verification. During data condensation, the researcher selected and organized relevant information from observations, interviews, journals, and field notes. The data were coded into engagement categories. During data display, the researcher arranged the coded data into descriptive patterns and thematic summaries. During conclusion drawing and verification, the researcher interpreted the patterns and compared data from different sources. Triangulation was used to strengthen credibility by examining the consistency of observation, interview, journal, and field-note data (Carter et al., 2014).

C. Findings and Discussion

The findings indicate that students demonstrated a high level of engagement when using Beelinguapp in reading activities. Their engagement was visible not only through observable classroom behavior but also through their perceptions, emotional responses, and learning strategies. The integration of digital technology appeared to change students' role from passive readers into active participants who interacted with text, audio, translation, and vocabulary support. This finding supports the view that technology-enhanced learning environments can foster engagement when they provide interactivity and personalization (Bond & Bedenlier, 2019; Nkomo, Daniel, & Butson, 2021).

Observation data showed that students maintained focus during the

reading activity. They rarely shifted attention to unrelated activities and consistently interacted with the application. Field notes recorded that several students adjusted their posture, used earphones, followed audio narration, and returned to difficult sections when needed. These behaviors reflect behavioral engagement because students showed attention, effort, and active participation in an academic task. Fredricks et al. (2004) define behavioral engagement as involvement in learning activities through participation, persistence, and task-related behavior.

The audio-text integration played a central role in sustaining attention. Students often synchronized reading with audio narration and used repetition when they did not understand a sentence. One student stated, 'I read while playing the audio, then I repeated the difficult part so that I could understand it better' (S1). This response shows that the student did not read passively. The student used the available feature to monitor comprehension and regulate the reading process. Another student said, 'When I do not understand something, I usually listen to the audio again and look at the translation, so the meaning becomes clearer' (S3). This statement indicates that students combined listening and translation to construct meaning.

Students' exercises and journal entries also showed that they could understand various texts. One student wrote, 'I understood that the black sea devil lives in the very deep ocean and has a unique way of surviving' (S1). Another student summarized a text about dinosaurs by writing, 'I understood that a meteorite caused the extinction of dinosaurs, but it also created opportunities for other creatures to develop' (S2). These responses demonstrate that students identified key ideas and interpreted cause-and-effect relationships. Therefore, engagement with the application supported meaningful comprehension, not merely surface-level reading.

Behavioral engagement appeared in students' active use of the application features. Students used bilingual texts, replayed audio, checked vocabulary, and explored flashcards. One student said, 'I read first, then I checked the translation when there was something I did not understand' (S2). Another student said,

'I repeated the difficult part and listened to the audio again' (S3). These responses show persistence and purposeful action. Students did not stop when they faced difficulty. They selected strategies that helped them continue reading and understand the text.

Students also showed behavioral engagement by following the reading flow from beginning to end. One student explained, 'I usually follow the audio from beginning to end so that I do not lose the storyline' (S1). Another student added, 'I tried the available features, such as vocabulary, so that I could understand new words better' (S5). These statements indicate that students used the application's features as learning resources. Their behavior reflects self-directed learning because they chose tools that matched their immediate reading needs.

Emotional engagement appeared through students' interest, enjoyment, comfort, and confidence while reading. Observation data showed relaxed body language and visible curiosity during the activity. Field notes also suggested that students did not show strong frustration when encountering unfamiliar vocabulary. Instead, they used translation or audio to continue reading. This condition indicates that the application created a low-pressure environment. In language learning, positive emotional conditions support willingness to participate and persistence in difficult tasks.

Interview data confirmed this positive emotional response. One student stated, 'I felt more interested because it was not as boring as usual' (S3). Another said, 'I felt more comfortable reading because the application provided support' (S4). These statements show that Beelinguapp changed students' perception of reading from a demanding activity into a more manageable and enjoyable process. The support provided by bilingual text and audio reduced the fear of misunderstanding English texts.

Other students connected the application features with motivation and confidence. One participant said, 'I usually get bored quickly when reading, but with this application it became more interesting because there was audio and the display was also good' (S2). Another explained, 'I became more confident because when I did not understand something, I could immediately see the meaning or listen again' (S1). These responses show

that audio, visual text, translation, and vocabulary tools helped students feel supported. Emotional engagement matters because students who feel confident and interested are more likely to remain involved in reading tasks.

The findings also show signs of intrinsic motivation. Several students expressed their willingness to continue using the application after the classroom activity. One student stated, 'I wanted to keep using it because reading felt more relaxed and less boring' (S5). This response suggests that engagement was not only driven by teacher instruction. Students developed personal interest in using the application because they experienced reading as less stressful and more accessible. Ryan and Deci (2000) explain that intrinsic motivation grows when learners experience interest, autonomy, and competence.

Cognitive engagement appeared in students' mental effort, strategy use, and depth of processing. Students did not only decode words. They monitored their understanding, moved between English and Indonesian texts, listened repeatedly, and used vocabulary features to retain new words. One student said, 'When there was a difficult word, I looked at the translation, then I tried to remember the word so that I would not forget it' (S1). Another said, 'I usually listened to the audio first, then read the text so that I could understand the meaning better' (S3). These statements demonstrate strategic thinking and flexible use of learning resources.

The use of flashcards and games also supported cognitive engagement. One student said, 'I used vocabulary features such as flashcards so that I could remember new words longer' (S5). This behavior shows that students extended learning beyond immediate comprehension. They tried to retain vocabulary for future reading. The combination of repetition, audio support, and bilingual text helped students organize information and confirm meaning. This pattern aligns with Mayer's (2020) theory that visual and auditory channels can support learning when integrated properly.

The presence of bilingual text reduced unnecessary cognitive burden because students could access meaning without stopping the reading process for a long time. Instead of becoming stuck on unfamiliar vocabulary, they could confirm meaning and return to the text. This support allowed them to focus on

comprehension, inference, and interpretation. Students' journals showed that they could restate information in their own words and connect ideas across the text. Such responses indicate cognitive processing beyond literal comprehension.

The discussion of these findings shows that Beelinguapp supported the three dimensions of engagement simultaneously. From a behavioral perspective, the application encouraged active participation through audio narration, bilingual text, translation, vocabulary tools, flashcards, and repeated reading. From an emotional perspective, it increased comfort, enjoyment, confidence, and motivation. From a cognitive perspective, it encouraged students to use comprehension strategies and process information more deeply. These dimensions did not operate separately. Students' positive emotions supported their persistence, and their persistence created more opportunities for cognitive strategy use.

The findings also clarify the role of digital tools in reading instruction. Beelinguapp did not automatically improve engagement by its presence alone. Engagement emerged because the features addressed specific reading difficulties. Audio narration helped students follow pronunciation and maintain reading flow. Bilingual text supported meaning-making. Translation reduced confusion. Vocabulary tools provided reinforcement. These features made reading more manageable and gave students more control over the learning process. Therefore, digital applications should be selected based on pedagogical fit, not merely because they are technologically attractive.

Compared with previous studies, this research supports findings that digital reading applications can improve comprehension and motivation (Herminingsih et al., 2024; Mukti et al., 2025; Silfani et al., 2024). However, the present study extends previous research by describing how engagement appears in classroom practice. It shows that students' engagement can be observed through concrete behaviors, emotional expressions, and cognitive strategies. This qualitative evidence provides a more detailed explanation of why Beelinguapp may support reading comprehension in EFL contexts.

Overall, the findings suggest that Beelinguapp can function as an

effective supplementary tool for English reading activities. It helps students remain focused, feel more comfortable, and apply reading strategies. The application should not replace teacher instruction because students still need guidance, text selection, monitoring, and reflection. However, when integrated into a structured reading activity, Beelinguapp can create a more interactive and supportive reading environment for senior high school students.

D. Conclusion

This study aimed to explore how senior high school students engage in reading comprehension through the use of Beelinguapp and to identify their behavioral, emotional, and cognitive responses during the reading process. The findings show that Beelinguapp contributes positively to students' engagement in reading activities. Students engaged through active interaction with audio narration, bilingual text, translation, vocabulary tools, and repeated reading. These features helped them maintain attention, follow the reading flow, and understand difficult parts of the text.

The findings also show that students demonstrated positive responses across the three dimensions of engagement. Behaviorally, students participated actively, stayed focused, and used application features to complete the reading task. Emotionally, students showed interest, enjoyment, comfort, confidence, and motivation. Cognitively, students used strategies such as rereading, replaying audio, checking translations, summarizing text content, and using flashcards to retain vocabulary. These responses indicate that Beelinguapp supported not only comprehension but also meaningful student involvement in the reading process.

This study has limitations. The number of participants was limited, and the data were collected within a short period. Therefore, the findings mainly describe short-term engagement rather than long-term reading development. Future research should involve more participants, longer implementation, and mixed-method designs to examine the relationship between engagement and measurable reading improvement. English teachers may use Beelinguapp as a supplementary reading tool, but they should still guide students in selecting

texts, using features effectively, and reflecting on their comprehension strategies.

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