

ENHANCING JUNIOR HIGH SCHOOL STUDENTS' ENGLISH PROFICIENCY THROUGH INTERACTIVE CASE-BASED LEARNING

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Article Info	Abstract
Article History Received: December 2025 Revised: February 2026 Accepted: June 2026 Published: July 2026	<i>The integration of learner-centered pedagogy and digital technology has become increasingly important for improving English language learning outcomes. Therefore, this study aimed to investigate the effectiveness of integrating CBL with interactive media to enhance students' English language proficiency for junior high school students. The study employed an exploratory case study design using mixed methods. Participants included junior high school students and English teachers involved in the implementation of CBL supported by interactive media. Data were collected through pre- and post-tests, questionnaires, classroom observations, and interviews. Instrument reliability analysis indicated acceptable internal consistency (Cronbach's $\alpha = 0.7613$). The findings revealed substantial improvements in students' learning outcomes. The mean score increased from 52.00 on the pre-test to 83.00 on the post-test, exceeding the minimum passing criterion of 75.00. Learning performance also became more consistent, as reflected in the reduction of the standard deviation from 6.51 to 3.61 and the increase in minimum scores from 45 to 74. Questionnaire results showed that student engagement demonstrated the strongest construct validity, while perceived improvement showed adequate validity and motivation exhibited a weaker correlation. Qualitative evidence further indicated higher levels of engagement, clearer understanding of learning materials, greater confidence in English use, and more active classroom interaction. The study concludes that integrating CBL with interactive media effectively enhances English proficiency, engagement, and learner confidence. These findings provide practical guidance for implementing technology-enhanced, learner-centered English instruction in secondary education.</i>
Keywords Case-based learning; Interactive media; Language proficiency; Learning performance;	

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INTRODUCTION

English language instruction at the junior high school level in Indonesia continues to rely predominantly on traditional methods. In many classrooms, instruction remains heavily dominated by teacher-centered approaches, textbook dependency, vocabulary memorization, and discrete grammar exercises. While these practices may support the acquisition of linguistic knowledge, they often provide limited opportunities for students to use English in meaningful communicative situations. Consequently, learners frequently demonstrate difficulties in transferring classroom knowledge to authentic language use, particularly in tasks requiring critical thinking, problem-solving, collaboration, and contextual communication. This issue is

particularly significant in English as a Foreign Language (EFL) contexts where exposure to English outside the classroom is limited. Students often encounter language as an academic subject rather than as a tool for communication and social interaction (Xuan Mai, 2024). As a result, classroom learning may become passive, reducing learner engagement, motivation, confidence, and opportunities for meaningful language production (Friatin et al., 2026). Previous studies show conventional instruction often fails to connect language learning to real-world situations, thereby limiting the development of communicative competence and higher-order thinking skills (Han, 2022; Mai et al., 2024; Zhong, 2025).

To address these concerns, educational researchers have increasingly advocated for contextual and inquiry-oriented pedagogies that actively engage learners in authentic problem-solving activities. Case-Based Learning (CBL) represents one such approach, as it situates learning within realistic scenarios that require students to analyze information, discuss alternative perspectives, make decisions, and communicate solutions. Case-Based Learning (CBL) offers a pedagogically sound alternative by integrating real-world cases and contextualized situations into classroom practice, thereby fostering meaningful language use (Fidan, 2023; Firdausi & Arif, 2025; Agustina & Ro'isatin, 2024; Schutte et al., 2025; A et al., 2021). The successful implementation of CBL, however, requires adequate teacher creativity and instructional resources. CBL creates opportunities for authentic communication, contextualized language practice, and problem-solving aligned with everyday discourse demands (Amorati et al., 2022). When supported by interactive media, this approach holds significant potential for enhancing students' English language proficiency and communicative competence (Schutte et al., 2025).

A number of empirical results indicated that CBL promotes critical thinking, analysis and decision making. In EFL contexts CBL tasks provide language learners with opportunities for authentic communicative activities involving the use of English for negotiation, persuasion and explanation, encourage active learning (Roell, 2019; Agustina & Ro'isatin, 2024) and wide-ranging learning experience (A et al., 2021; Obeagu & Muhammad, 2025). Likewise, drawing on teachers' anecdotes helps to foster inclusiveness and engagement by relating classroom activities with students' outside-of-school experiences (Hoffer, 2020). Research suggests that interactive media can enhance motivation, support comprehension, and create more dynamic learning environments than traditional instructional materials. When combined with CBL, interactive media may strengthen the authenticity and effectiveness of case-based activities by allowing learners to engage more deeply with realistic situations and communicative tasks (Wang et al., 2025; Daryanes & Darmadi, 2023), increase students motivation and improve learning and performance on assessments and interactivity (Amin, 2022; Vidya Seshan, 2021).

Taken together, these results indicate that multimedia case-based analogies provide enriched contextual information (such as pictures, nonverbal intonation cues, gesture) which may facilitate pragmatic comprehension and enhance learner engagement with language-focused tasks. Mixed-interaction CBL balances learner autonomy and flexibility with the need for collaborative case-based inquiry (Zhang, 2023). However, evidence suggests that scaffolding with the help of guided prompts or teacher mediation is essential in order to prevent shallow participation. CBL that is used interchangeably with case study and case method is an extremely flexible approach that stimulates learning among the students as it is based upon problem solving and encourages analytical skills (Gunawan et al., 2024; Herreid et al., 2011).

Despite the growing body of literature on CBL and educational technology, several important gaps remain. First, much of the existing research has examined CBL and technology integration as separate instructional innovations rather than investigating their combined pedagogical effects. Second, studies exploring technology-supported CBL have been conducted predominantly in higher education, professional training, or science-related

disciplines, with relatively limited attention given to junior high school EFL classrooms. Third, existing studies have largely focused on quantitative learning outcomes, providing insufficient understanding of how students and teachers experience the implementation of technology-enhanced CBL in everyday classroom practice. Consequently, there remains limited evidence regarding whether the integration of CBL and interactive media can simultaneously improve English proficiency, learner engagement, confidence, and classroom interaction among adolescent EFL learners.

Furthermore, few studies within the Indonesian junior high school context have adopted a mixed-methods perspective that combines objective measures of language achievement with qualitative insights into students' perceptions, motivations, and learning experiences. Such evidence is necessary because successful instructional innovation depends not only on measurable academic gains but also on learners' acceptance, engagement, and perceptions of instructional effectiveness. Therefore, this study addresses these gaps by investigating the implementation of Case-Based Learning supported by interactive media in an Indonesian junior high school EFL setting. The innovation of this study lies in three aspects. First, it examines the synergistic integration of Case-Based Learning and interactive media as a unified instructional approach rather than treating them as separate pedagogical innovations. Second, it focuses on adolescent learners in Indonesian junior high schools, a context that remains underrepresented in the existing literature on technology-enhanced CBL. Third, it employs a mixed-methods design that combines quantitative measures of English language achievement with qualitative exploration of students' and teachers' perceptions, thereby providing a more comprehensive understanding of both learning outcomes and classroom experiences.

By addressing these gaps, this study contributes to the growing literature on technology-enhanced language learning and offers practical insights for designing engaging, contextualized, and learner-centered EFL instruction. Accordingly, this study seeks to answer the following research questions: To what extent does the implementation of Case-Based Learning supported by interactive media improve junior high school students' English language proficiency? How do students and teachers perceive the implementation of Case-Based Learning supported by interactive media in the English language classroom?. This study integrates these two pedagogical innovations and simultaneously explores their impact on English language proficiency as well as students' and teachers' perceptions. By doing so, it provides a more comprehensive understanding of how technology-enhanced CBL can support language learning, engagement, and classroom interaction among adolescent EFL learners.

RESEARCH METHOD

Research Design

This study employed a mixed-methods case study design to investigate the implementation of Case-Based Learning (CBL) supported by interactive media in English instruction at junior high school students in Ternate. The mixed-methods approach was selected because the study aimed to examine both the effectiveness of the instructional intervention and the experiences of participants during its implementation. Quantitative data were collected through pre-test and post-test assessments to measure changes in students' English language proficiency before and after the intervention. Qualitative data were gathered through classroom observations, interviews, and reflective discussions to explore students' and teachers' perceptions, experiences, and challenges related to the use of CBL supported by interactive media.

The study is also categorized as a case study because it focuses on an in-depth investigation of a single bounded system, namely the implementation of CBL with interactive media in one junior high school context. According to Creswell (2014), a case study enables researchers to examine a contemporary phenomenon within its real-life setting and to develop a rich understanding of contextual factors influencing the phenomenon. By integrating

quantitative evidence of learning outcomes with qualitative insights into classroom experiences, the mixed-methods case study design provides a comprehensive understanding of both the impact and the implementation of CBL supported by interactive media in English language learning.

Research Participants

The research population consisted of 345 students enrolled at SMP Negeri 7 Ternate during the 2024/2025 academic year. Class VIII-F, was selected as the research participants using purposive sampling. The class consisted of 30 students aged between 13 and 14 years, which corresponds to the typical age range of eighth-grade students in Indonesian junior high schools. Class VIII-F was selected based on several considerations. First, the class represented a typical English as a Foreign Language (EFL) learning context within the school, with students demonstrating a variety of English proficiency levels based on their previous English achievement records and teacher evaluations. Second, the class English teacher was willing to implement Case-Based Learning (CBL) supported by interactive media throughout the research period, thereby ensuring the feasibility of the intervention. Third, the class schedule and learning conditions allowed for continuous observation and data collection during the implementation process.

Prior to data collection, researcher obtained permission from school administration to conduct the study. In addition, informed consent was secured from the participating teacher, students, and their parents or guardians. Participants were informed about the objectives of the study, the voluntary nature of participation, the confidentiality of the collected data, and their right to withdraw from the study at any time without academic consequences. To protect participants' privacy, all data were anonymized during analysis and reporting. The selection of 30 students was considered appropriate for this study because the research adopted a mixed-methods case study design that required both quantitative and qualitative data collection. A class size of 30 students provided sufficient data for comparing pre-test and post-test results while also allowing for in-depth classroom observations, interviews, and exploration of students' learning experiences. Furthermore, the class represented the natural instructional setting in which the intervention was implemented, enabling the researcher to examine the effectiveness and practicality of CBL supported by interactive media within an authentic classroom context.

Instruments

This study employed four research instruments, namely an English achievement test, a questionnaire, classroom observation sheets, and semi-structured interview guides, to collect both quantitative and qualitative data related to the implementation of Case-Based Learning (CBL) supported by interactive media. The English achievement test was administered as a pre-test and post-test to measure students' English language proficiency before and after the intervention. The test was designed based on the English learning objectives and curriculum standards for Grade VIII students and assessed students' abilities in vocabulary, reading comprehension, grammar usage, and contextual language application. The pre-test was administered prior to the implementation of CBL, while the post-test was conducted after the intervention to determine any improvement in students' learning outcomes. The test results directly addressed the first research objective concerning the effectiveness of CBL supported by interactive media in improving students' English proficiency.

The questionnaire was administered to all 30 participating students to collect quantitative data regarding their perceptions of the implementation of Case-Based Learning (CBL) supported by interactive media. The questionnaire initially consisted of 15 items across three dimensions (Engagement, Motivation, and Perceived Improvement). For reporting purposes, nine representative items are presented in the manuscript: Engagement (3 items),

Motivation (4 items), and Perceived Improvement (2 items). Responses were measured using a four-point Likert scale ranging from 1 (Strongly Disagree) to 4 (Strongly Agree). The engagement dimension assessed students' active participation and involvement in learning activities, the motivation dimension measured students' interest and enthusiasm toward English learning, and the perceived improvement dimension explored students' perceptions of their progress in English language skills following the intervention.

To ensure the quality of the questionnaire, the instrument was subjected to validity and reliability testing before its administration. Item validity was examined using the Pearson Product-Moment correlation coefficient to determine whether each item appropriately measured the intended construct. Reliability was assessed using Cronbach's Alpha, which measures the internal consistency of the questionnaire items. The analysis produced a Cronbach's Alpha coefficient of 0.7613, exceeding the minimum acceptable threshold of 0.60. This result indicates that the questionnaire items demonstrated satisfactory internal consistency and were sufficiently reliable for measuring students' engagement, motivation, and perceived improvement in learning English through CBL supported by interactive media. Datasheet is presented as follows.

Table 1
The Questionnaires Item for Learners' Perceptions, Motivations, and Challenges

Engagement category (E)	Motivation Category (M)	Perceived Improvement (P)
1. Interactive media helps me stay focused on the English lesson.	1. Learning English with interactive media in CBL makes me feel more motivated.	1. Interactive media in CBL helps me improve my English vocabulary.
2. I enjoy discussing case studies with my classmates when interactive media is involved	2. Interactive media encourages me to try harder when solving English case-based tasks.	2. Overall, I believe my English skills have improved because of interactive media in case-based learning
3. The use of interactive media makes English learning more interesting and engaging for me.	3. I feel more confident to share my ideas when interactive media is used in class.	
	4. The use of interactive media in case-based learning makes me want to improve my English skills further.	

Data Collection

Data collection was conducted in four stages. First, the researcher obtained permission from the school administration, coordinated with the English teacher, prepared the instructional materials and interactive media, and developed the research instruments. Prior to the intervention, a pre-test consisting of 20 multiple-choice questions was administered to all students in Class VIII-F to assess their initial English language proficiency. The second stage involved the implementation of Case-Based Learning (CBL) supported by interactive media in English instruction. The learning activities were based on the topic "No Littering" from the Grade VIII textbook *English for Nusantara* (Kemendikbudristek, 2022). During the lessons, students were presented with contextualized cases related to environmental issues and were encouraged to analyze problems, discuss possible solutions, and communicate their ideas. Interactive media, including multimedia presentations, digital materials created using Book Creator, and educational videos, were integrated into the learning process to support comprehension and increase student engagement. Students participated in both individual and group activities throughout the intervention. Classroom observations were conducted during

each session by two teacher-observers to document instructional practices, student participation, classroom interactions, and the use of interactive media.

The third stage focused on collecting students' perceptions of the learning experience. After the intervention, students completed a questionnaire designed to measure their engagement, motivation, and perceived improvement in English learning. The questionnaire was completed anonymously to encourage honest responses. The final stage involved administering a post-test consisting of 20 multiple-choice questions to evaluate students' English achievement after the intervention. Semi-structured interviews were also conducted with selected students and the English teacher to explore their experiences, perceptions, and challenges related to the implementation of CBL supported by interactive media. All interview data were recorded, transcribed, and analyzed together with the observation notes, questionnaire responses, and test results to provide a comprehensive understanding of the effectiveness of the intervention and participants' learning experiences. The component of observations consists of syntax, reaction principal, social system, and execution of support system in case-based learning. Each of the categories presented as follow.

Table 2
Observation's Data Sheet form Teacher

No	Component	Description	Implementation Yes / No
1	Syntax	- Students exploring topics - Students discussed learning material that have not yet understood - Teacher forms learning group of 3-4 students - Students engage in the dialogue with other groups - Student derived conclusion based on the result of discussion and presentation	
2	Reaction principle	- Teacher explains the learning flow to be carried out using the implementation of the Case-Based Method supported by interactive media - Students actively participate in presenting materials - Students are motivated to optimize all their potential - Students actively participate in group discussion activities - Teachers play an active role in guiding and motivating students to engage actively in the learning process	
3	Social System	- Effective communication is established among students while upholding the principle of respecting different opinions. - Established polite and communicative language and emphasizing tolerance and cooperation. - Active student participation - Teacher creates engaging and enjoyable learning atmosphere - Students demonstrate critical, communicative and open attitude	
4	Execution Support system	- Teaching materials (Students Worksheet (SW), relevant Lesson Plan (LP) and Interactive media (IM) with case based method applied in the classroom - Varied media (PPT, Book creator, Video, Quizzes) presented during the class observation - Teaching materials can be used to achieve learning objectives - Teaching materials can be used in learning assessment	

The semi- structured interviews with 5 selected students and 2 teachers were analyzed thematically, to identify habitual forms, categories, and themes related to students' learning experiences. The interview comprises of subjective experiences, challenges and perceived benefits of the case-based learning implementation. The questions developed from what students have experienced in studying especially "No littering" topic in unit 4 that integrated with various interactive media.

Data Analysis

To obtain the quantitative data, the researchers assembled data gathered from questionnaires of respondents' perceptions, motivations, and challenges and to ensure proper coding responses. The Cronbach alpha was set to calculate Number of items (k) = 9 Number of respondents (N) = 30. The data Computed $\alpha = 0.7613$ with acceptable interpretation or moderate internal consistency as it measures the same construct reliably. Engagement items (E2, E4, E5) maintain high correlations around 0.88–0.92, confirming strong construct validity. Motivation items all have moderate to strong correlations between 0.64 and 0.76, while Perceived Improvement items (P1, P5) show very strong correlations around 0.88–0.89, confirming strong item validity. Cronbach's alpha indicates internal consistency reliability of a scale, measuring how closely related the items are as a group. Generally accepted thresholds are: Excellent reliability: $\alpha \geq 0.80$, Adequate reliability: $0.60 \leq \alpha < 0.80$, Poor reliability: $\alpha < 0.60$. The table analysis of three categories: Engagement (0.875) shows excellent reliability, Motivation (0.677) indicates adequate reliability, and Perceived Improvement (0.732) also shows adequate reliability. Thus the average alpha (α) of 0.761 also falls in the adequate to good reliability range. While this study intends to obtain as much as items categories to gain students' achievement in studying English through CBL by implementing interactive media, the shortage of this analysis is the number of respondents and number of categories statement. This may need further exploration for gaining large numbers of respondents for further research.

Table 3
Cronbach Alpha Interpretation Scale

No	value	Interpretation
1	≥ 0.90	Excellent (very high)
2	0.80 - 0.89	Good (high)
3	0.70 - 0.79	Acceptable (moderate)
4	0.60 - 0.69	Questionable (low)
5	0.50 – 0.59	Poor (very low)
6	<0.50	Unacceptable (no correlation)

The validity correlations across the three categories. The y-axis represents the correlation coefficients (0–0.8). Each category contains three bars representing: Convergent validity, Discriminant validity and Overall validity. The Interpretation by Category: Engagement 0.71 (strong positive relationship), Discriminant correlation: 0.30 (moderate, acceptable), Overall correlation: 0.51. Interpretation: Engagement demonstrates high convergent and moderate discriminant validity, suggesting a well-defined construct. Motivation: Convergent correlation: 0.29 (weak to moderate), Discriminant correlation: 0.25 (slightly lower, acceptable), Overall correlation: 0.27. Interpretation: Motivation shows low convergent validity and acceptable discriminant validity. Improvement in item alignment is recommended. Perceived Improvement: Convergent correlation 0.45 (moderate), Discriminant correlation: 0.25 (low, good) Overall correlation: 0.35. Interpretation: Perceived improvement has adequate convergent and good discriminant validity. Engagement shows the strongest validity. Motivation needs refinement to improve convergent validity. Perceived Improvement is adequately valid and well-defined.

RESEARCH FINDINGS AND DISCUSSION

Research Findings

Descriptive analysis of the role of interactive media within case-based learning (CBL)

This section presents the findings of the study according to the two research questions. The first research question examined the extent to which Case-Based Learning (CBL) supported by interactive media improved students' English language proficiency. The second research question explored students' and teachers' perceptions of the implementation of CBL supported by interactive media. Quantitative findings are presented first, followed by qualitative findings from questionnaires, observations, and interviews. Below are the data of RQ1 explanation:

Table 4
Pretest and posttest analysis

Test	Mean	Standard Deviation	Minimum Score	Maximum Score
Pretest	52.00	6.51	45	65
Posttest	82.97	3.61	74	88

The computing data analysis showed that from 30 respondents, the learning acquisition form case-based learning with interactive media during the implementation of the study. The results indicate a substantial improvement in students' English language proficiency after the implementation of CBL supported by interactive media. The mean score increased from 52.00 in the pre-test to 82.97 in the post-test. In addition, the standard deviation decreased from 6.51 to 3.61, suggesting more consistent student performance following the intervention. The minimum score increased from 45 to 74, while the maximum score increased from 65 to 88. The findings show that nearly all students achieved higher scores in the post-test than in the pre-test, indicating overall improvement in English achievement following the implementation of CBL supported by interactive media.

Case-based learning implementation

Questionnaire, observation, and interview data revealed generally positive perceptions of the implementation of CBL supported by interactive media. Student interviews indicated that interactive media helped them remain focused and engaged during lessons. Students reported that authentic cases encouraged active participation and increased motivation because the activities were connected to real-life situations. They also perceived improvements in critical thinking, speaking performance, and collaboration skills. However, some students reported challenges related to unfamiliar vocabulary, distractions from media elements, and limited time for completing activities.

Table 5
Student's Experience, Challenges and Perceived Benefits of the Implementation of CBL
Using Media Interactive

Topic	Description	Findings
Subjective experience	Interactive media helps students to stay focused on the English lesson.	Increased students' motivation because the cases felt like real-life problems, engaging students with the presentation that they can interact with their peers
Challenges	Challenges and difficulties faced by the students with the approach	Media elements distracting students, unfamiliarity with new words terminology, time constraints
Perceived benefit	Skills, knowledge, or attitude develop through the interactive cases	Improved students critical thinking, develop their social engagement during study and increase their speaking performance through presentation

The use of Case-Based Learning (CBL) combined with interactive media reflects a movement toward more student-centered education. Teachers' experiences interview highlight positive perceptions of the approach. The teacher reported that CBL supported by interactive media encouraged active participation, improved classroom interaction, and enhanced students' language skills. The use of videos, digital presentations, interactive quizzes, and Book Creator activities was considered beneficial for creating meaningful learning experiences. Nevertheless, challenges were identified, including internet connectivity issues, technical problems, and time constraints.

Table 6
Teachers' Experience, Challenges and Perceived Benefits of CBL Using Media Interactive

Topic	Description	Findings
Subjective experience	Experience in facilitating CBL using interactive media, comparison to traditional teaching method	Encourage students' active participation; though it is quite challenging, managing discussion is rewarding; Learning from various media and interactive applications is a step ahead (video, quizzes, book creator)
Challenges	Challenges and difficulties faced by the teacher with the approach	Technical issues such as media pauses, electricity and internet connections. Students must be treated differently; time constraints
Perceived benefit	Outcome, skills, knowledge, or attitude, CBL impacts on the future	Class has better collaboration and language skills; the approach can be applied in English practical context

The observation data analyzed teacher performance and classroom settings across four key areas: Effectiveness of Learning, Teacher and Student Development, Classroom Environment Quality, and Supporting Systems. Classroom observations supported these findings. Students actively participated in discussions, group work, and case analysis activities. The classroom environment promoted collaboration, communication, and engagement, while interactive media and instructional materials were effectively integrated into the learning process. Overall, observation data indicated that the implementation of CBL supported by interactive media created a positive and supportive learning environment. Observation data can be seen in the following chart.

Discussion

The findings of this study indicate that the implementation of Case-Based Learning (CBL) supported by interactive media contributed positively to students' English language proficiency and classroom engagement. The substantial increase in students' mean scores from the pre-test (52.00) to the post-test (82.97) suggests that students benefited from learning activities that required them to apply language knowledge in meaningful and contextualized situations. The decrease in score variability further indicates that the intervention supported not only high-achieving students but also those who initially demonstrated lower levels of proficiency. These findings suggest that CBL supported by interactive media can create a more equitable learning environment by facilitating active participation and consistent learning outcomes across students (Agustina & Ro'isatin, 2024).

The improvement in students' English proficiency can be understood through the pedagogical principles of CBL, which position learners as active participants in constructing knowledge. Rather than receiving information passively, students were encouraged to analyze cases, discuss alternative solutions, negotiate meaning, and present their ideas. Such activities required the use of English for authentic communication and problem-solving purposes. This finding supports the view that CBL serves as an effective approach for connecting language learning with practical application while promoting critical thinking, collaboration, and problem-solving skills (Yoo & Park, 2015). The results also reinforce evidence that CBL can

significantly enhance students' knowledge acquisition and learning outcomes (Dupuis & Persky, 2008).

The qualitative findings further revealed that students perceived the learning activities as engaging, relevant, and motivating. Students reported that interactive cases encouraged them to participate actively in discussions and presentations while connecting classroom learning to real-life situations. These perceptions help explain the positive gains observed in the achievement test results. The findings are consistent with Roell (2019), who argues that case-based activities provide authentic communicative opportunities that allow learners to practice negotiation, persuasion, and explanation in meaningful contexts. Similarly, Hoffer (2020) emphasizes that case-based storytelling promotes engagement by linking classroom activities with learners' everyday experiences.

Another important finding concerns the role of interactive media in supporting the effectiveness of CBL. The use of videos, multimedia presentations, Book Creator activities, and digital learning materials appeared to increase students' attention, comprehension, and willingness to participate. Interactive media provided visual and contextual support that helped students understand learning content more effectively while maintaining interest throughout the lessons (Hmelo-Silver, 2004; Johnson & Johnson, 2019; Mishra, 2006). This finding suggests that technology functions not merely as a supplementary tool but as a pedagogical resource that enriches learning experiences and facilitates meaningful language use (Procel et al., 2024). The combination of CBL and interactive media therefore appears to create a learning environment that supports both cognitive and communicative development (Wang et al., 2025) (Swider-Cios et al., 2023).

From the teachers' perspective, the findings demonstrate that CBL supported by interactive media offers valuable opportunities for improving classroom interaction and student participation. Teachers observed greater enthusiasm, collaboration, and willingness among students to express ideas and solve problems collectively. These findings are consistent with previous studies reporting that digital platforms, multimedia resources, and authentic case materials enhance learner involvement and collaborative learning (Kim, Lee, & Park, 2019) (Zhao et al., 2024). Moreover, the approach enables students to connect theoretical knowledge with practical situations, thereby strengthening critical thinking and problem-solving abilities (Hoffer, 2020; Hmelo-Silver, 2004; Thistlethwaite, D, S, & JM, 2012). Our findings also suggest that implementing technology-enhanced CBL can contribute to teachers' professional growth as they develop new instructional strategies and digital competencies (Mishra, 2006; Dharmayanti, 2020; Tri Zahra Ningsih, 2025).

Despite these positive outcomes, the study also identified several challenges that should be considered in future implementation. Both students and teachers reported difficulties related to unfamiliar vocabulary, limited instructional time, technical disruptions, and unstable internet connectivity. These challenges indicate that the success of technology-supported CBL depends not only on instructional design but also on adequate technological infrastructure and classroom management. Similar challenges have been reported by Ibrahim and Husnin (2022), who note that technological limitations can hinder effective implementation of digital learning approaches. Likewise, preparing meaningful case materials and selecting appropriate media require considerable planning and instructional effort (Huang et al., 2020).

The findings have several practical implications for English language teaching. First, English teachers should consider incorporating authentic cases into classroom instruction to encourage meaningful communication and active language use. Second, interactive media should be selected carefully to support learning objectives rather than simply increasing technological complexity. Third, schools should provide adequate technological resources, internet access, and teacher training to maximize the effectiveness of technology-enhanced instruction. In addition, teachers may benefit from professional development programs focused

on designing case materials, facilitating collaborative learning, and integrating digital tools effectively into English language instruction. Such improvements may help overcome implementation challenges while enhancing student learning outcomes.

Although the present study provides valuable insights into the implementation of CBL supported by interactive media, its findings should be interpreted within certain limitations. The study was conducted in a single class at one junior high school, which may limit the generalizability of the results to other educational contexts. Future studies should involve larger and more diverse samples from different schools, grade levels, and geographical regions. Researchers may also investigate the long-term effects of technology-enhanced CBL on language proficiency, critical thinking, communication skills, and learner autonomy. Comparative studies examining different types of interactive media and instructional designs would further contribute to understanding how technology can best support English language learning.

CONCLUSION

This study investigated the implementation of Case-Based Learning (CBL) supported by interactive media in English instruction at SMP Negeri 7 Ternate. The findings revealed that the integration of CBL and interactive media contributed positively to students' English language proficiency, as evidenced by the substantial improvement in post-test scores compared to pre-test scores. In addition, qualitative findings showed that both students and teachers perceived the approach positively, highlighting increased engagement, motivation, collaboration, critical thinking, and opportunities for meaningful language use. The main contribution of this study lies in demonstrating how the combination of CBL and interactive media can support learner-centered English instruction in a junior high school EFL context. By integrating quantitative evidence of language achievement with qualitative insights into participants' experiences, the study provides a more comprehensive understanding of the pedagogical value of technology-enhanced case-based learning.

The findings have important implications for English language teaching. Teachers are encouraged to incorporate authentic cases and interactive media into classroom instruction to promote active learning, contextualized communication, and student engagement. Schools and educational stakeholders should also support the effective integration of technology by providing adequate resources, infrastructure, and professional development opportunities for teachers.

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INFORMED CONSENT STATEMENT

Participation in this study was entirely voluntary. All participants were informed about the purpose, procedures, potential risks, and benefits of the study before agreeing to take part. They were assured that their identities would remain confidential and that all information provided would be used solely for research purposes. Participants were also informed of their right to withdraw from the study at any time without penalty or loss of benefits to which they were otherwise entitled.

DATA AVAILABILITY STATEMENT

The data used in this study are not publicly available due to privacy concerns and ethical obligations related to participant confidentiality. This restriction ensures compliance with

ethical research standards and applicable data protection regulations. However, researchers or interested parties may request access to the dataset for validation or further analysis.

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