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HYBRID LEARNING MODEL BASED ON RECIPROCAL TEACHING AS AN INNOVATION IN DEVELOPING STUDENTS' READING COMPREHENSION ABILITIES

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Abstract

Reading comprehension is a crucial foundation in the learning process of students. However, many obstacles remain in mastering this competency, especially in the digital era, which requires adapting learning methods. Therefore, an innovative approach is needed that can integrate technology and proven effective learning strategies. This study aims to develop a Hybrid Learning model based on Reciprocal Teaching to systematically and measurably improve students' reading comprehension skills. This model combines online and offline learning with collaborative discussion strategies to form a deeper understanding of the text. The method used in this study is a research and development approach. Data were collected through interviews, observations, reading tests, and questionnaires, which were analysed both qualitatively and quantitatively. The findings of this study confirm that the Hybrid Learning model based on Reciprocal Teaching is more effective than conventional methods in improving students' metacognitive skills and reading comprehension. This is evidenced by a significant increase of 31.7% in the experimental group, with a p-value of 0.001, compared to the control group, which increased by 13.6% with a p-value of 0.045. This effectiveness demonstrates that integrating metacognitive strategies, utilising technology, and employing collaborative learning in the hybrid model can encourage students to be more active, reflective, and independent in their understanding of reading texts. The Hybrid Reciprocal Teaching model has been proven to be more effective than conventional methods, as it significantly improves students' metacognitive skills and reading comprehension.

Keywords: Hybrid Learning, Reciprocal Teaching, Metacognitive, Reading Comprehension, Learning Effectiveness

INTRODUCTION

Reading comprehension is a key foundation for developing students' literacy competencies, particularly in facing the challenges of 21st-century learning. However, various international literacy surveys, such as the PISA (Planning for Student Assessment and Evaluation) survey, indicate that Indonesian students' reading performance remains relatively low (Tehusijarana, 2019). Furthermore, the COVID-19 pandemic has driven a shift toward blended learning, which demands new and effective pedagogical approaches (Carroll & Constantinou, 2023). In this context, reciprocal teaching is considered capable of improving comprehension skills through metacognitive strategies such as summarizing, questioning, clarifying, and predicting (Vuong & Steklács, 2025). Combining the hybrid model with reciprocal teaching is expected to provide an innovative solution for improving students' reading skills in the digital age (Hayashi et al., 2025).

The reciprocal teaching model was developed by Palincsar and Brown as a collaborative approach that allows students to learn to read actively and reflectively (Palincsar & Brown, 1984). This strategy has been shown to improve text comprehension through social interaction in group discussions. In addition, reciprocal teaching encourages the development of metacognitive strategies that are essential for understanding complex texts (Stebick & Paxton, 2013). In practice, this strategy can also help students with learning difficulties gain confidence in reading (Alfassi, 2004). Other research shows that consistent use of this approach can improve reading achievement across various levels of education (Yang, 2010). Meanwhile, hybrid learning provides flexibility in organizing learning through a combination of face-to-face and online learning (Hümmer et al., 2026; Yuetqi et al., 2025). In a hybrid context, the integration of reciprocal teaching methods is increasingly relevant because it can be conducted through

digital forums or in-person meetings (Hümmer et al., 2026). Research shows that hybrid learning can increase student motivation and participation (Chan, 2024), especially when integrated with teaching strategies that involve dialogue and reflection, such as reciprocal teaching. Furthermore, the use of technology also opens up space for students to learn more independently and flexibly and allows teachers to conduct real-time formative assessments (Al-Ali et al., 2025; Wut et al., 2025). Therefore, this research offers an important contribution to the development of literacy- and technology-based learning models that are adaptive to modern learning contexts.

The novelty of this proposal lies in the development of an interactive and adaptive hybrid learning model, which allows students not only to practice understanding texts but also to develop critical and reflective thinking skills through teacher guidance and peer interactions, both synchronously and asynchronously. This model is expected to be able to meet the needs of 21st-century learning, which demands flexibility, active participation, and literacy strengthening through a more contextual and sustainable approach. However, many similar studies have not yet optimally integrated hybrid learning and reciprocal teaching approaches, so an in-depth review of previous research development maps (state of the art) is needed to strengthen the theoretical foundation. Supporting aspects such as instrument validation, model trials, and readiness of learning technology also need to be carefully prepared to ensure the effectiveness of the offered model.

Based on the description above, the problems to be studied in this study are formulated in three questions: (a) How is the application of the reciprocal teaching-based hybrid learning model in improving students' reading comprehension skills? (b) What are the obstacles and strategies encountered by teachers and students in implementing this model? (c) How effective is the reciprocal teaching-based hybrid learning model in developing students' metacognitive skills in reading? The purpose of this study is to analyze the application of the reciprocal teaching-based hybrid learning model in improving students' reading comprehension skills through structured metacognitive strategies. In addition, this study aims to evaluate the effectiveness of the model and identify the obstacles and strategies used by teachers and students in the implementation process.

LITERATURE REVIEW

Hybrid learning is a learning model that integrates face-to-face (offline) methods with digital technology-based learning (online), creating a more flexible, adaptive, and personalized learning experience (Al-Anazi et al., 2025). This approach allows students to access online materials at any time while receiving direct guidance from instructors through face-to-face sessions in physical classrooms (Imran et al., 2025). Hybrid learning emerged in response to developments in educational technology and the need for learning processes that are no longer bound by space and time. This model supports student-centered learning through differentiated learning speeds, a variety of multimedia learning resources, and collaborative learning utilizing digital devices and virtual learning platforms. Thus, hybrid learning is an effective solution to bridge the gap in educational access and improve learning quality through the integration of technology and human interaction (Khadidos et al., 2025).

In the context of modern education, hybrid learning is a crucial strategy for improving the quality of competency-based learning and digital literacy, including in the fields of health, pharmacy, and interdisciplinary research (Al-Anazi et al., 2025; Imran et al., 2025). This model enables cross-disciplinary and cross-regional collaboration, expands academic networks, and enhances scientific communication skills through the use of digital platforms for discussions, presentations, and publication of research results. The advantages of hybrid learning are evident in its ability to increase the effectiveness of the learning process, as participants can explore independently online and then deepen their understanding through live classroom discussions. Furthermore, hybrid learning also supports equitable access to quality education for communities in remote areas by minimizing geographical barriers and limited physical facilities. Therefore, hybrid learning is not merely an alternative method, but a new paradigm for future education that places technology and social interaction as two key pillars of a more innovative, inclusive, and sustainable learning transformation.

Reciprocal Teaching is an interactive learning approach that emphasizes two-way dialogue between educators and students to build deeper understanding through reading and critical thinking activities (Alkasasbeh et al., 2025). This model involves four main strategies: predicting, questioning, explaining or clarifying, and summarizing. These strategies are carried out in turns between teachers and students, so that students are not only recipients of information but also act as discussion leaders in study groups (Alsalhi et al., 2024; Jones, 2025). Thus, Reciprocal Teaching helps students develop metacognitive skills, improve academic literacy, and strengthen collaborative competencies through structured reflective dialogue. This approach has been proven effective in improving reading comprehension, learning engagement, and higher-order thinking skills because it provides space for students to construct meaning independently while learning from the perspectives of others in cooperative

learning activities (Muanifah et al., 2021). On the other hand, students' reading comprehension is a fundamental skill that focuses not only on recognizing words or reading text mechanically, but also includes the ability to understand, interpret, evaluate, and draw conclusions from the information presented in the reading (Huang, 2024; Sand et al., 2025). This competency plays a crucial role in improving the quality of learning because reading comprehension is the foundation for mastering knowledge across all subjects. Students with good reading comprehension skills are able to identify main ideas, analyze relationships between concepts, and use the information obtained to solve problems and make critical decisions (Panyasai, 2023). Thus, improving reading comprehension not only contributes to academic achievement but also develops broader literacy skills as a preparation for facing the demands of the information and learning era.

Thus, hybrid learning is a learning model that combines face-to-face and digital-based learning to create a flexible, interactive, and student-centered learning process. This model not only expands access to education through the use of technology but also improves the quality of learning through collaboration, discussion, and direct mentoring. In its implementation, approaches such as Reciprocal Teaching play a crucial role in improving reading comprehension skills through active dialogue, prediction strategies, questioning, clarification, and summarization, so that students can develop critical thinking and metacognitive skills. Improving reading comprehension skills is key to academic success because it helps students understand text content, analyze information, and make reflective decisions, which are highly relevant to meeting literacy and competency demands.

METHOD

The research method used in this study is a mixed methods method with a sequential exploratory design approach, namely combining qualitative and quantitative methods sequentially. The qualitative approach was carried out first to explore the needs of students and teachers regarding reading comprehension learning models and to design a Hybrid Learning model based on Reciprocal Teaching. Data collection techniques at this stage included in-depth interviews with Indonesian language teachers, observations of learning activities, and documentation studies of syllabi and lesson plans. The findings from this stage were used as a basis for developing learning tools and media appropriate to the context of the target schools. Next, a quantitative approach was used to test the effectiveness of the developed model through a quasi-experiment with a pretest-posttest control group design. The research sample consisted of two purposively determined groups of students: an experimental group using a reciprocal teaching-based hybrid model, and a control group using conventional methods. Data were collected through reading comprehension tests, learning motivation questionnaires, and observations of student engagement. Data analysis was conducted using descriptive and inferential statistics using t-tests to determine differences in results between the two groups. This study also utilized software such as SPSS for quantitative analysis and NVivo 12 Plus to support qualitative analysis.

RESULTS AND DISCUSSION

Implementation of the Hybrid Learning Model Based on Reciprocal Teaching in Improving Students' Reading Comprehension Skills

The implementation of a hybrid learning model based on reciprocal teaching is designed to address the challenges of literacy learning in the digital age. Through the integration of metacognitive strategies and the use of technology, this model provides space for students to practice reading comprehension in a more reflective and collaborative manner. The following five key points explain how this model can improve students' reading comprehension skills.

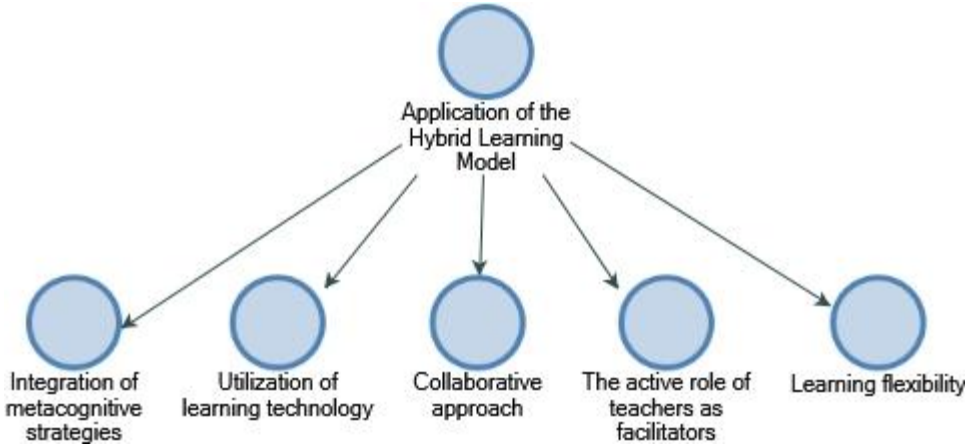

Figure 1. Implementation of Hybrid Learning Model Based on Reciprocal Teaching in Improving Students' Reading Comprehension Skills

The systematic integration of metacognitive strategies such as summarizing, questioning, clarifying, and predicting into both face-to-face and online learning is key to implementing a reciprocal teaching-based hybrid learning model (Hümmer et al., 2026). These strategies enable students not only to understand the text literally but also to develop higher-order thinking skills through a reflective process. In practice, summarizing helps students identify the main idea of a reading, questioning encourages them to dig deeper into understanding, clarifying serves to clear up misunderstandings or confusion, and predicting hones anticipatory skills regarding the content of the text to be read. The structured application of these four strategies in face-to-face learning provides opportunities for teachers to provide direct guidance, while in online sessions students can practice independently or collaborate with peers through digital discussion forums. With consistent repetition across both learning modes, these metacognitive strategies can strengthen reading comprehension while increasing students' awareness of their own thinking processes, ultimately contributing significantly to improved reading comprehension skills.

The use of learning technologies such as Learning Management Systems (LMS), video conferencing applications, and online discussion forums significantly expands student interaction within a hybrid learning model based on reciprocal teaching (Miranda et al., 2024; Yunus & Afandi, 2025). The LMS serves as a central management platform for materials, assignments, and assessments, allowing students to access learning resources anytime and anywhere. Video conferencing applications enable synchronous learning that mimics a face-to-face classroom setting, where teachers and students can interact directly, discuss, and clarify understanding. Meanwhile, online discussion forums provide opportunities for students to participate in asynchronous learning, providing more time for reflection, developing questions, and responding to peer feedback. The integration of these three technologies makes the learning process more flexible, adaptive, and interactive, and is able to address a variety of student learning styles in a digital context.

On the other hand, a collaborative approach through small group discussions, both synchronous and asynchronous, is an important strategy for building active student engagement in reading comprehension (Wang & Du, 2025). In synchronous sessions, whether face-to-face or virtual, students can practice reciprocal teaching strategies together, for example by dividing the roles of summarizer, questioner, clarifier, and predictor of text content. Meanwhile, in asynchronous digital forums, discussions are more flexible because students can write down ideas, respond to questions, or provide clarification according to their own time. This combination of synchronous and asynchronous discussions not only strengthens social interaction but also trains students' critical and reflective thinking skills. Furthermore, this type of collaboration creates an inclusive learning environment, where every student has an equal opportunity to actively participate in the reading comprehension learning process.

The teacher's active role as a facilitator is a key factor in the successful implementation of a reciprocal teaching-based hybrid learning model. Teachers no longer act merely as conveyors of information, but rather as guides who guide students' learning process to be more reflective and critical. In face-to-face sessions, teachers can provide concrete examples of the application of metacognitive strategies, guide group discussions, and provide direct feedback on how students summarize, ask questions, clarify, and predict the content of the reading (Utari & Putri, 2025). Meanwhile, in online sessions, teachers play a role in maintaining student engagement by moderating discussion forums, providing comments or guidance, and identifying students who need further guidance. Thus, teachers serve as a crucial link, ensuring that the reciprocal teaching process is focused, consistent, and has a real impact on improving reading comprehension.

Meanwhile, the learning flexibility offered by the hybrid model allows students to access materials, exercises, and feedback more independently. The presence of an LMS and digital forums allows students to learn at their own pace and style, through both synchronous and asynchronous learning. Students can review material they don't understand, complete additional exercises, or reflect on reading without being tied to class time constraints. Furthermore, real-time or delayed feedback from teachers helps students identify their strengths and weaknesses in understanding texts. This encourages the growth of independent learning, where students don't simply wait for teacher instructions but actively take the initiative in managing their own learning process. This flexibility ultimately strengthens literacy skills and equips students with lifelong learning competencies that are highly relevant in the 21st century.

Thus, the implementation of a hybrid learning model based on reciprocal teaching not only offers a technical combination of face-to-face and online learning but also demands a paradigm shift in pedagogical practice. The success of this model depends heavily on the consistent application of metacognitive strategies, technological readiness, and the ability of teachers and students to adapt to their respective new roles. Although proven to improve reading comprehension skills, challenges such as the digital access gap, varying student motivations, and additional burdens on teachers require continued criticism to ensure this innovation does not stop at the conceptual level. Therefore, further research and ongoing trials are essential to measure the effectiveness of this model in various school contexts, ensuring that its implementation is truly relevant, inclusive, and sustainable in addressing 21st-century literacy needs.

Obstacles in Implementing Hybrid Learning Models Based on Reciprocal Teaching in Improving Students' Reading Comprehension Skills

In implementing a hybrid learning model based on reciprocal teaching, teachers and students face a number of obstacles that affect the effectiveness of the learning process.

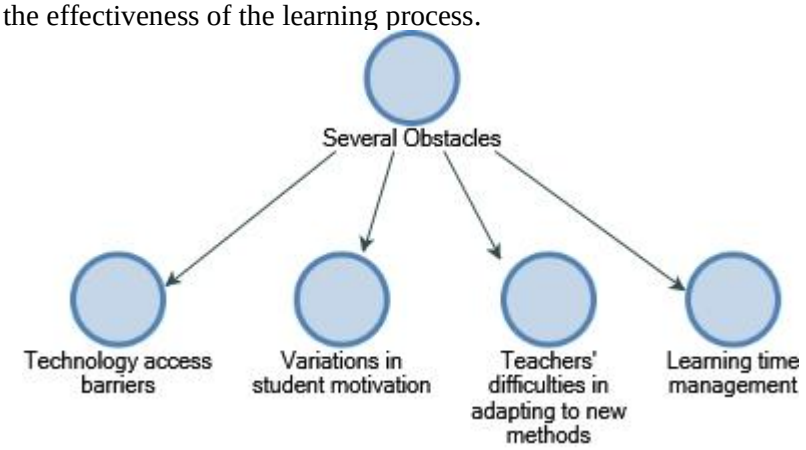

Figure 2. Obstacles in Implementing Hybrid Learning Models Based on Reciprocal Teaching in Improving Students' Reading Comprehension Skills

In implementing a reciprocal teaching-based hybrid learning model, one of the main obstacles often encountered is access to technology. Limited devices such as laptops or other suitable devices, coupled with unstable internet connections, make it difficult for some students to participate in online learning. This has the potential to create gaps in participation and learning quality among students. To address this issue, a strategy that can be adopted is providing offline materials, either in the form of printed modules or digital files that can be accessed without an internet connection. Furthermore, selecting a learning platform that is simple, lightweight, and does not require large data capacity is also a solution so that students from various backgrounds have equal opportunities to participate in the learning process.

Another challenge that arises is the variation in students' motivation to actively participate in discussions and learning activities. Not all students share the same interests and enthusiasm, so some tend to be passive and rely solely on group members. This condition can reduce the effectiveness of reciprocal teaching, which emphasizes collaborative interaction. Therefore, strategies are needed to increase student engagement, one of which is through providing rewards or positive reinforcement for students who actively contribute to discussions. The form of reward does not have to be material, but can take the form of verbal appreciation, additional assessments, or public recognition in class forums. This strategy has been proven to foster students' intrinsic motivation while creating a more dynamic and competitive learning atmosphere in a healthy manner.

For teachers, the difficulty of adapting to new methods is also a challenge. Some teachers take longer to master the use of learning technology, both in operating digital platforms and managing online student interactions. A lack of experience using hybrid methods based on reciprocal teaching can leave teachers feeling overwhelmed, especially when they have to prepare learning materials for two modes simultaneously. To address this, a strategy that can be implemented is to provide ongoing training and mentoring for teachers. With training programs, teachers can become more confident in utilizing technology and understand how to integrate metacognitive strategies into hybrid learning. Mentoring is also important to ensure teachers not only master the technical aspects but also adapt learning strategies to students' needs.

Furthermore, managing learning time is often a challenge because the hybrid model requires synchronization between face-to-face and online sessions. If not managed properly, students and teachers can experience burnout due to overlapping schedules or an imbalance between offline and online learning. This can reduce learning effectiveness and even create resistance to the implementation of the hybrid model. Therefore, a necessary strategy is to plan a more flexible and efficient hybrid schedule, taking into account time availability, assignment load, and student learning rhythms. A well-structured schedule can help maintain consistency in the implementation of the reciprocal teaching strategy, while ensuring that students receive a balanced learning experience between synchronous discussion and asynchronous reflection. Thus, proper time management will strengthen learning effectiveness and increase student and teacher satisfaction.

Overall, the various obstacles faced in implementing a reciprocal teaching-based hybrid learning model, ranging from limited access to technology, varying student motivations, teacher difficulties in adapting methods, and time management, can be overcome through appropriate strategies such as providing offline materials, strengthening motivation, teacher training, and flexible schedule planning. These efforts demonstrate that implementation challenges are not absolute obstacles, but rather opportunities to strengthen innovation in learning. Thus, the reciprocal teaching-based hybrid learning model can be seen as a strategic breakthrough in developing students' reading comprehension skills, as it not only emphasizes the use of technology but also fosters collaborative interactions, independent learning, and critical thinking skills, which are essential provisions in the 21st-century education era.

The Effectiveness of the Hybrid Reciprocal Teaching Model in Developing Students' Metacognitive Skills in Reading

To assess the effectiveness of the hybrid reciprocal teaching model in developing students' metacognitive skills in reading, this study used a quantitative approach through a reading comprehension test (pretest-posttest) and a metacognitive questionnaire. The data obtained were then compared between the experimental group using the hybrid reciprocal teaching model and the control group using the conventional method. The comparison results are presented in the following table to demonstrate the differences in students' reading comprehension skills.

Table 1. Comparison Results of Pretest and Posttest of Reading Comprehension Ability in Experimental and Control Groups

Group	Average Pretest	Average Posttest	Improvement (%)	Significance (p-value)
Experimental (Hybrid + Reciprocal Teaching)	62.5	82.3	+31.7%	0.001
Control (Conventional Method)	61.8	70.2	+13.6%	0.045

The effectiveness of the hybrid reciprocal teaching model in developing students' metacognitive skills can be clearly seen through the results of the reading comprehension test and metacognitive questionnaire. The data show that the experimental group, which followed the hybrid reciprocal teaching approach, experienced an average increase from 62.5 in the pretest to 82.3 in the posttest, or 31.7%. Meanwhile, the control group, which used the conventional method, only experienced an increase from 61.8 to 70.2, or 13.6%. This difference in achievement illustrates that learning strategies that integrate interactive discussions, the use of technology, and metacognitive approaches can produce more significant improvements in understanding. Based on the t-test results, the p-value for the experimental group was recorded at 0.001, while for the control group it was 0.045. Both p-values are below the 0.05 significance level, so the differences are statistically significant. However, the difference lies in the strength of the effect: the p-value for the experimental group was much smaller, indicating that the hybrid reciprocal teaching learning model had a stronger and more consistent effect on improving reading comprehension. This indicates that

this model not only has a generally positive effect but is also effective in producing significant differences between learning conditions. Further analysis shows that the success of the hybrid reciprocal teaching model is significantly influenced by the integration of metacognitive strategies such as summarizing, questioning, clarifying, and predicting. These strategies encourage students to actively control their thinking processes while reading, resulting in deeper and more focused reading comprehension. Furthermore, the combination of face-to-face and online learning provides students with flexibility to access materials and engage in broader discussions. Thus, improvements in metacognitive skills are evident not only in quantitative test results but also in students' more active involvement in reflectively processing information.

Overall, the results of this study confirm that the hybrid reciprocal teaching model is highly effective compared to conventional methods in developing students' metacognitive skills in reading comprehension activities. The significant improvement in the experimental group demonstrates that learning that emphasizes interaction, reflection, and flexibility can address the challenge of low reading comprehension in the classroom. With the support of systematic teaching strategies, this model can be used as an innovation in language learning, while also contributing to the development of student literacy in the digital era, which increasingly demands critical and independent thinking skills.

CONCLUSION

The main findings of this study indicate that the hybrid reciprocal teaching model is proven to be more effective than conventional methods in improving students' metacognitive skills and reading comprehension. This is evident from the average increase in posttest results of the experimental group of 31.7%, significantly higher than the control group, which only increased by 13.6%. Furthermore, a significance test with a p-value of 0.001 in the experimental group strengthens evidence that the difference in results is not coincidental, but rather a real result of the implementation of learning strategies that integrate metacognition, technology, and collaborative interactions. Thus, these findings confirm that the implementation of hybrid reciprocal teaching can encourage students to be more active, reflective, and independent in understanding reading texts. Suggestions for further research include the need to test this model in broader and more diverse contexts, both at different educational levels and in schools with varying socio-economic backgrounds.

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