Jurnal Pemberdayaan Masyarakat
Volume 5 Issue 1 Year 2026 | Pages 261–273
ykgm.org

E-ISSN 2962-8091
DOI: https://doi.org/10.46843/jpm.v5i1.641

Enhancing University Students' Reading Comprehension through Local Wisdom-Based Materials and Problem-Based Learning

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ABSTRACT

This research investigates the integration of local wisdom-based reading materials into an effective problem-based learning model in enhancing university students' reading comprehension. The study was inspired by the lack of cultural relevance of reading material often sourced from other countries and not aligned with students' backgrounds. A pre-experimental mixed-methods design was used with 33 students, who received the reading comprehension pre- and post-tests and an interview. Quantitative data were analyzed using paired-samples t-tests and N-Gain, while qualitative data were analyzed descriptively. The results showed an improvement in the post-test scores of students who used local wisdom-based materials, with a very high N-Gain, indicating that LKBKpBL based on PBL can be categorized as effective. Additional outcomes indicated improvements in motivation, critical and reflective thinking, collaboration, and cultural identity. The research recommends that fostering local wisdom in PBL is not only helpful for enhancing understanding and perception but also for maintaining cultural insight and interaction. Educationally, the findings contribute to literacy education by presenting a culturally responsive, problem-based instructional framework that fosters students' ability to relate reading to their cultural experiences, sustain higher learning outcomes, and maintain local value relevance in institutions of higher learning.

ARTICLE INFORMATION

Keywords:
higher education; local wisdom; problem-based learning;mreading comprehension

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Article info: Submitted: 2025-11-03 | Revised: 2025-12-09 | Accepted: 2026-01-11 | Published: 2026-03-16
Recommended citation: Muhria, L., Fitriati, S. W., Suwandi., & Wahyuni, S. (2026). Enhancing University Students' Reading Comprehension through Local Wisdom-Based Materials and Problem-Based Learning. *Jurnal Pemberdayaan Masyarakat, 5*(1), 261-273.

INTRODUCTION

Reading comprehension is an essential academic skill for college students in an EFL setting. This competence enables learners to understand the content of academic knowledge and to enhance their critical thinking and constructive reasoning. However, despite its importance in higher education, many college students continue to struggle to comprehend reading texts. The materials used at the third level are usually approached and explained in a decontextualized, language-demanding, and culturally remote way from students 'lived experiences. Reading material is often sourced from a foreign context, so students cannot relate it to their own cultural experiences (Güngör et al., 2024). Such cultural distance might also attenuate the sense of personal involvement and emotional investment in the text, ultimately decreasing both comprehension and learning motivation. Efforts to address this issue have led to the development of teaching materials grounded in local wisdom. Contextualized and culturally embedded materials enable students to interpret texts more meaningfully because the content aligns with their lived experiences, values, and surrounding

environment (Stanton et al., 2019). Cultural relevance facilitates stronger connections between prior knowledge and new information, thereby supporting comprehension processes. Local wisdom refers to the traditions, values, and social norms inherent within a community that shape patterns of behavior and collective identity (Manuhutu et al., 2025b; Mungmachon, 2012). The integration of such elements into reading materials contributes not only to improved understanding of texts but also to the reinforcement of students' awareness of their cultural heritage. In regional contexts such as Majalengka, local wisdom may be reflected in folklore, local history, customary practices, and ecological knowledge related to agriculture and the environment (Hasyem & Ferizaldi, 2022; Utami et al., 2020). The inclusion of these culturally grounded aspects in reading instruction is expected to strengthen engagement, sustain motivation, and enhance comprehension, as the materials become personally relevant and meaningful to learners (Benaired & Reguieg, 2024).

Education serves as a core vehicle for shaping people's understanding, abilities, and personal manners. The building of character is not something that happens overnight but a continuous process in which cognitive comprehension, affective awareness, and social interaction should be blended into learning experiences. Teaching that effectively connects learners' cultural contexts to school subjects is one such strategic route that supports this comprehensive development. Local-wisdom-based reading materials are more than just tools for language learning. In this sense, the materials can serve as carriers of cultural instruction and as sites for students to respond to and reflect on the values of their own communities. Engaging with culturally meaningful texts helps learners internalize local values, raise awareness of the context, and sustain their cultural identity in the face of globalisation forces (Manuhutu et al., 2025a). Previous research has provided empirical evidence of the importance of integrating local culture into learning. Local wisdom-based materials have been shown to improve students' conceptual understanding and critical thinking skills (Manuhutu et al., 2025b). The use of culturally relevant teaching materials has also been shown to positively impact student engagement and retention compared to conventional materials (Hasnah et al., 2024). These findings emphasize the urgency of providing learning resources that are connected to students' cultural contexts to support optimal learning outcomes. The development of local wisdom-based materials has indeed been extensively studied (Karomah et al., 2024; Febriani et al., 2020; Septy, 2019). Studies specifically examining how these materials are implemented in learning models that encourage active engagement, such as Problem-Based Learning (PBL), remain relatively limited, thereby opening up more focused research opportunities for integrating content and pedagogical approaches.

Problem-Based Learning (PBL) is a pedagogical model that centers real-world problems in learning activities, encouraging students to construct knowledge independently and collaboratively. This approach is designed to develop critical thinking, communication, and problem-solving skills through an inquiry-based learning process (Fadilla et al., 2021; Liu & Pásztor, 2022). In the context of teaching reading, PBL repositions reading from merely understanding texts to an analytical process oriented toward problem-solving, where students interpret and evaluate information to respond to authentic issues (Song et al., 2025). This orientation reflects the constructivist principle, which positions students as active subjects in constructing understanding through exploration, dialogue, and meaningful reflection. PBL is considered capable of improving reflective thinking skills and student engagement because the learning process is directly linked to real-life contexts that are meaningful to students (Suryanti & Nurhuda, 2021; Poojar et al., 2017; Suhirman et al., 2021). Its implementation stages generally include problem formulation, diagnosis, exploration of alternative solutions, and evaluation of results, with the teacher acting as a facilitator who directs the inquiry process (Sukackė et al., 2022). The implementation of this model has also been shown to improve students' literacy and reasoning skills (Abidin et al., 2021). The development of students' collaboration and communication competencies is also an identified impact of PBL practices (Hmelo-Silver & Barrows, 2015). These

advantages still require the availability of contextual and relevant learning materials for optimal implementation (Siregar, 2022). Local wisdom has significant potential to strengthen PBL implementation by providing a context that is close to students' realities. Learning that integrates local culture is considered more meaningful and contextual, making it easier for students to build understanding rooted in their own experiences (Aikenhead, 2006). Problem-solving processes rooted in local situations not only train critical thinking skills but also foster an appreciation for culture and increase environmental awareness (Zainuri et al., 2024). In reading lessons, texts grounded in local wisdom serve as triggers for schema activation, enabling students to connect new information with existing knowledge and leading to a deeper, more authentic understanding. The integration of local wisdom and PBL offers two simultaneous benefits: providing culturally relevant content to increase engagement and a systematic problem-solving structure to strengthen understanding.

Research that incorporates local wisdom-based reading materials and the Problem-Based Learning (PBL) model, with both implemented simultaneously or collaboratively, is still quite rare, especially in higher education. Existing studies rarely investigate the relationships between cultural content and motivation, or between PBL and performance in learning, separately, with a holistic view of both PBL and indigenous culture within the same instructional design. Empirical support for the advantages of locally wisdom-based materials in a PBL context for enhancing students' reading comprehension is still limited. This disparity points to a notable gap in the research that warrants further investigation through more rigorous, hypothesis-driven studies.

The present study aims to fill a gap by describing how the use of local wisdom-based reading materials integrated into students' learning through a Problem-Based Learning model remains effective in improving students' reading comprehension at the tertiary level. The theoretical basis for this study is the belief that fusing elements of culture-bound content and PBL principles into a cohesive whole will enhance engagement and deepen understanding of the text. The distinctive feature of this research is the integration of two pedagogical dimensions, local wisdom and PBL, into an instructional model to build students' reading comprehension at the university (University level in general teaching), which has not been frequently elaborated previously. This study is expected to serve as a resource for both theoretical and practical research. The study contributes to theory by expanding our knowledge of how problem-solving-based approaches and culturally grounded pedagogy interact as mechanisms for fostering reading comprehension. Practically, this study's findings offer a strategic option for teaching reading at the higher education level, particularly in the EFL (English as a Foreign Language) Department, rooted in local wisdom, and to be implemented in problem-based learning. The central issue is to what extent these locally developed teaching materials, integrated into the Problem-Based Learning (PBL) model, can enhance students' reading comprehension.

METHOD

The study applied a pre-experimental design with a one-group pre-test–post-test method to analyze the effectiveness of local wisdom-based reading materials within the Problem-Based Learning (PBL) approach on reading comprehension. Its design allowed the detection of changes in reading performance by comparing students' abilities before and after the intervention within the same cohort. A mixed-methods study was employed to create an in-depth picture of learning outcomes, combining quantitative data from reading comprehension tests with qualitative insights from student interviews. The subjects were 32 second-semester students of the English Language Education Study Program at a university in West Java, Indonesia. A purposive sampling method was adopted to ensure that participants were relatively homogeneous in their level of English competence and in their previous experience of writing in an academic reading course. Participation was not compulsory, and

all students received all data collection, including the administration of reading comprehension tests and follow-up interviews.

There were two primary instruments in this study: a reading comprehension test and a semi-structured interview. The reading comprehension test was presented in both multiple-choice and short-answer formats to assess students' levels of literal, inferential, and evaluative reading comprehension. Two EFL specialists validated the grammar-perception scale to establish face and content validity and subsequently piloted it to assess its reliability. A semi-structured interview was constructed to examine students' experience and perceptions of learning with locally based materials adopted into the PBL learning model. Questions explored aspects of engagement, cultural alignment, progress in understanding over time, and the usefulness of the learning sequence. The learning intervention consisted of six sessions and was developed using the Problem-Based Learning (PBL) model. The lesson started with a pre-test of the students' prior reading comprehension and ended with a post-test after all the lessons had been completed. Contextual reading-based problems sourced from local cultural texts (e.g., folktales, regional history, local traditions) were solved in small-group collaboration sessions. The lecturer took the role of a facilitator who sets the inquiry process, facilitates discussions, and maintains a systematic, reflective problem-solving process.

Table 1. Syntax of the Problem-Based Learning Model

Stage	Teacher's Behavior
Stage 1. Student orientation to the problem	The teacher presents phenomena, examples, or anecdotes to raise issues, explains learning objectives and necessary procedures, and encourages students to engage in solving the selected problem.
Stage 2. Organizing students for learning	The teacher divides students into groups and helps them define and organize learning tasks related to the problem.
Stage 3. Guiding individual/group experiences	The teacher encourages students to gather information through reading and inquiry to develop explanations and solutions.
Stage 4. Developing and presenting the work	The teacher assists students in planning and preparing reports, presentations, or written responses, and facilitates peer sharing.
Stage 5. Analyzing and evaluating the problem-solving process	The teacher guides students in reflecting on their investigations and evaluating both the content learned and the problem-solving strategies used.

The data were collected using a combination of quantitative and qualitative techniques to obtain an overall view of the impact of the intervention. Quantitative data were collected from pre- and post-test reading comprehension results to assess the increase in students' abilities after learning with local wisdom-based material within a PBL model. The qualitative data were collected through interviews conducted after the intervention. These interviews afforded insights into students' experiences with learning, their ideas about the cultural relevance of the materials, and how they thought having local wisdom and PBL impacted their comprehension of what they read. Statistical analysis of quantitative measurements was performed to assess development in student learning. The differences between pre-test and post-test scores were analyzed using a paired-samples t-test at the 0.05 level of significance. The normalized gain (N-Gain) was derived to assess the extent of improvement in reading comprehension after the intervention. Interviews were transcribed and thematically analyzed to identify recurrent patterns in students' motivation, engagement, and perceptions of the reading materials. The combination of both quantitative and qualitative findings resulted in a more comprehensive treatment of the effectiveness of locally wisdom-based materials in improving reading comprehension under PBL.

RESULTS AND DISCUSSION

In the first phase, data were quantitatively analyzed to assess the effectiveness of locally produced reading materials on the reading comprehension of higher education EFL students. The goal of the analysis was to detect an improvement in scores before and after the intervention. The descriptive statistics are reported in Table 2, providing a succinct summary of the distribution and dynamic trends in scores.

Table 2. Descriptive Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Pre-test	59.55	33	6.150	1.071
Post-test	74.79	33	5.555	0.967

As reported in Table 2, the pre-test and post-test means were 59.55 and 74.79, respectively. And this implies that there is a significant change in reading comprehension after studying local wisdom-based reading materials. In addition, the reduction in the standard deviation from 6.150 (pre-test) to 5.555 (post-test) also reflects decreased score variability, indicating that students' performance was more uniform after treatment. Based on these descriptive findings, the use of local wisdom-based reading materials appeared to have a positive effect on students' reading comprehension. Verification of whether it was statistically significant, in turn, was performed using the paired-samples t-test. Initial data were analyzed quantitatively to test the effectiveness of local wisdom-based reading materials on the reading comprehension of EFL students in higher education. Further analysis required that the normality assumption be met, so a normality test was conducted before inferential testing. Normality tests used the Kolmogorov–Smirnov and Shapiro–Wilk tests to ensure the data distribution conformed to the parametric assumptions.

Table 3. Normality Test

	Kolmogorov–Smirnov			Shapiro–Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pre-test	0.051	33	0.200*	0.987	33	0.954
Post-test	0.082	33	0.200*	0.967	33	0.397

Note: This is a lower bound of the true significance value. Lilliefors Significance Correction applied.

The results in Table 3 show that the pre-test and post-test data had significance values above 0.05 in both normality tests, namely the Kolmogorov–Smirnov and Shapiro–Wilk tests. These values indicate that the distributions of both variables met the assumption of normality and were therefore suitable for analysis using parametric statistical procedures. The fulfillment of these assumptions enabled further analysis using descriptive statistics and paired-samples t-tests to identify statistically significant differences in reading comprehension scores before and after treatment.

Table 4. Paired Samples t-Test

Pair	Mean Difference	Std. Deviation	t	df	Sig. (2-tailed)
Pre-test – Post-test	-15.24	1.06	-82.48	32	0.000

The pre-test and post-test scores significantly differ, $t(32) = -82.48$, $p < 0.001$. These results indicate a large effect of the training program on listening skills. The negative average difference between pre-test and post-test (-15.24) suggests that scores after training were significantly higher than before. Reading material grounded in local wisdom has a significant positive effect on EFL students' reading comprehension. The rise in average reading scores and the significant differences

clearly show that incorporating local cultural content into reading materials can promote learners' engagement and comprehension quality in an EFL context. Student gains were next evaluated through calculations of normalized gain (N-Gain) to provide an approximate image of the intervention's effectiveness.

Table 5. N-Gain Descriptive Statistics

Variable	N	Minimum	Maximum	Mean	Std. Deviation
N-Gain Score	33	0.46	1.00	0.6592	0.1535
N-Gain (%)	33	45.95	100.00	65.92	15.35

The mean N-Gain score of 0.66 (or 65.92%) falls within the moderate to great improvement category according to Hake's (1999) classification. This indicates that, on average, students experienced a substantial increase in their reading comprehension after using local wisdom-based reading materials. The quantitative findings were complemented by a qualitative analysis of student interview data to explore the integration of local wisdom-based materials into the PBL model for reading comprehension. The thematic analysis aimed to explore students' perspectives, experiences, and reflections during the learning process. The findings indicated that co-representation of culturally meaningful content with problem-solving tasks provides better opportunities for engagement and deeper reflection on the solution. Four main themes were identified from the data: increased engagement and motivation through cultural relevance, strengthened understanding through familiar contexts, the development of active and collaborative learning through the PBL process, and the growth of critical and reflective thinking skills. These findings reinforce and more comprehensively explain the effectiveness of the learning interventions identified in the quantitative analysis.

Table 6. Summary of Themes, Codes, and Representative Excerpts

Theme	Codes/Subthemes	Representative Excerpts
Increased Engagement and Motivation through Cultural Relevance	Familiarity with cultural content; Emotional connection; Increased reading motivation	"I feel more interested to read because the story is from my own culture and I can imagine it clearly." (R7) "Usually, reading texts is boring, but this one makes me excited because I know the story and the place." (R14)
Improved Comprehension through Contextual Understanding	Relating texts to personal experience; Easier vocabulary recognition and understanding implied meaning.	"Because the text uses local stories, I can understand the meaning faster." (R9) "I do not need to translate everything because I already know the context." (R21)
Active and Collaborative Learning through the PBL Process	Group problem-solving; Peer discussion; Shared responsibility	"When we worked together to solve the problem in the story, I learned from my friends' ideas." (R5) "Discussing the local story in a group made me understand it more deeply." (R18)
Development of Critical and Reflective Thinking	Making moral or social connections; Evaluating cultural values; Reflective awareness	"I learned that every local story teaches a moral lesson we can apply in life." (R11) "Reading this way made me think about what happens in my community." (R27)
Strengthening Cultural Identity and Appreciation	Pride in local heritage; Increased cultural awareness; Sense of belonging	"I am proud that our local story is used for learning in university." (R16) "It is good to study something from our culture, not always from foreign texts." (R25)

As shown in Table 6, this theme indicates that students were better engaged and motivated when they encountered reading materials embedded with local cultural elements. In every case, the respondents reported a feeling of emotional connection and pleasure that their texts echoed the traditions, places, or values they knew. For instance, "my heart is open," respondent 7 (R7) said, "*I feel more interested in reading because the story is from my own culture and I can have a clear image of it*." This suggests that local discourse helped students access background knowledge, facilitating comprehension. Similarly, Respondent 14 (R14) expressed, *"Usually, reading texts is boring, but this one makes me excited because I know the story and the place."* This response highlights that familiarity not only increased engagement but also transformed reading from a routine academic task into a personally relevant activity. Both excerpts suggest that cultural proximity served as a motivational driver, enabling students to approach reading tasks with enthusiasm and curiosity rather than obligation.

The appearance of these themes can serve as strong qualitative evidence for the significant growth in reading comprehension scores detected by the statistical test. Learning materials that are culturally relevant help students connect emotionally and cognitively to new ideas. This triggering engagement level can be explained based on schema theory, in which background knowledge is an important element for meaningful reading (Erten & Razı, 2009). The contextualization of local knowledge allows the learner to navigate their cultural schema for interpretation, thereby rendering the processing of an image more efficient and reducing cognitive load from exposure to new content.

In the PBL environment, everyday contexts provide authentic problems that students tackle with confidence. There is an emotional connection, and when students recognize or identify with cultural content that reflects their lived experiences, they are more likely to delve deeper into texts and understand the information (Patel, 2008). This trend is consistent with previous results that culturally contextualized materials enhance student motivation and engagement (Rahmawati et al., 2020; Sumarni, 2018). The practical implications for the efficacy of interventions are that the degree of both ecological alignment and cultural resonance is likely to affect how effective an intervention will be.

The second theme highlights that students found it easier to comprehend the texts when the texts reflected contexts and experiences familiar to their lives. Respondents frequently noted that the local stories allowed them to grasp meaning more quickly and with less confusion. For instance, Respondent 9 (R9) stated, "*Because the text uses local stories, I can understand the meaning faster*." This response suggests that comprehension improved, as students were able to activate prior knowledge of cultural settings and vocabulary. Similarly, Respondent 21 (R21) said, "*I do not need to translate everything because I already know the context.*" This suggests that contextual familiarity reduces students' reliance on word-for-word translations, allowing them to focus on understanding ideas and implied meanings. Simultaneously, these excerpts demonstrate that locally grounded materials facilitate a top-down reading process, in which readers rely on context and background knowledge to comprehend the text efficiently.

The results under this theme explain the reason for the much higher post-intervention reading comprehension scores. Context familiarity seems to facilitate cognitive processing because students are driven to associate new knowledge with prior mental models. According to Schema Theory, understanding is based on readers' proficiency in linking what is read to information they already have in their interrelations (Erten & Razı, 2009). The use of familiar contexts, cultural references, and conventions defines understanding as a matter of verifying what the reader already knows rather than of creating new meaning, thereby reducing cognitive load and improving accuracy of acquisition. A conceptual explanation for this effect is also offered when thinking in sociocultural terms. Learning is more effective when it is mediated by technology or icons that convey cultural meaning to learners

(McVee et al., 2005). Culturally situated materials also reflect the principle of meaning-focused input-based learning, according to which understanding is promoted as students engage with texts that are comprehensible, relevant, and intrinsically interesting (Faridi, 2010). The embedding of cultural context within a PBL structure, therefore, creates richer, deeper learning contexts.

In a PBL context, contextualized materials present realistic problems that necessitate moving beyond the literal sense of the text. Texts that are culturally based allow students to discuss real-world implications and apply reasoning with greater depth of thought. This also suggests that the efficiency of local wisdom-based material is not only context-dependent, indicating emotional level, as illustrated in the previous theme, but also cognitive. Understanding cultural context reassures information integration and alignment within a mental model, enabling readers to comprehend much more efficiently. The third theme reflects the students' greater sense of participation, interaction, and collaboration in the learning activity. The PBL (Problem-Based Learning) model led students to actively participate in sharing and solving problems based on the text they had read. For example, Respondent 5 (R5) explained, "*When we worked together to solve the problem in the story, I learned from my friends' ideas.*" This response shows that collaboration within the PBL framework allowed students to exchange perspectives and co-construct an understanding of the text, thereby enriching their comprehension. Similarly, Respondent 18 (R18) shared, "*Discussing the local story in a group made me understand it more deeply.*" This indicates that group interaction during GKs induces a more profound processing of text meaning when students explain, question, and justify their interpretations together. The following excerpts highlight that the integration of PBL not only provides interactive reading but also creates a sense of shared accountability and mutual learning among students.

This theme provides narrative evidence that explains how and why using locally derived materials in combination with PBL enhances understanding. The emphasis on collaboration in PBL is consistent with the constructivist perspective, which highlights how information is actively constructed through social interaction and reflection rather than being transmitted passively (Piaget, 1973). Discussions about culturally relevant texts promote student engagement by giving them access to their own experiences and others' perspectives; as a result, they reach consensus through discussion of meaning. The social pressure of these processes fosters more profound 'reading'; i.e., understanding is pushed beyond the literal level, transforming into critical and reflective reading.

These results are consistent with the idea of PBL as a pedagogical approach that promotes the practice of critical thinking and conceptual change, developed through problem-solving activities and student discussion (Suhirman et al., 2021). Conducting collaborative inquiry makes students active agents in meaning-making, which is likely to explain the marked increase in post-test scores on quantitative measures. This one also fits cooperative learning theory, since it stresses the value of positive interdependence, promotive interaction, and coordination in contributing to greater achievement gains and enhanced retention (Zhao, 2023). The use of PBL with locally relevant materials offers twofold benefits: culturally appropriate content keeps students interested, while the PBL structure fosters an interactive environment conducive to better learning. The content-process interface of process and content in the intervention design may thus be seen as an indication that it is not only the former but also the integration of these parts that underlies its effectiveness. The pedagogical implications suggest that active learning and the meaning-based approach to collaborative problem-solving can be integrated with culturally situated reader materials to promote student-centered contexts that are more likely to instigate sustainable, purpose-driven reading engagement.

The fourth finding reveals that embedding local wisdom-based materials into the PBL framework has developed students' critical and reflective thinking about the meanings of the texts they read. Students get to comprehend not just the literal plot but also to unpack the moral, cultural,

and social messages behind familiar tales. For example, Respondent 11 (R11) stated, *"I learned that every local story teaches a moral lesson we can apply in life."* This indicates that reading activities encouraged students to engage in moral reflection, connecting textual messages to real-life contexts. Similarly, Respondent 27 (R27) explained, *"Reading this way made me think about what happens in my community."* This indicates that the act of reading encouraged social-cultural learner reflection, in which learners were asked to relate local issues to the text. The narratives suggest that when local knowledge and problem-solving dialogues were incorporated, students not only made sense of the text but also created personal and ethical meanings. This concept provides qualitative evidence for the argument that the treatment was effective not only in improving comprehension but also in cognitive processes of reading. Bloom's Taxonomy (Kundu & Bej, 2025) determined that the students have moved away from just "understanding" and "applying" to the higher-order thinking processes of "analyzing" and "evaluating." The integration of culturally embedded texts and PBL discussions also offered a range of authentic cognitive demands, such as making sense of and rendering intelligible the meaning-making behind those texts, engaging in moral interpretations, and upscaling learning to reflect on their social world.

These results support the belief that learning becomes meaningful as individuals reflect on experiences and make them applicable to real life (Ebikiemo, 2023). The stages of PBL, especially problem analysis and evaluation, provide a structural framework for this reflective activity. The exploration of local stories allows students to recognize social problems, connect them to current conditions in their community, and discuss the lessons that can be learned from or the solutions sought to address these issues. The process proves not just to deepen text comprehension, it also helps develop critical consciousness, as education should provide students "with a way of thinking that allows them critically analyze the world around them in order to act and change it." (Jemal, 2017). The use of local wisdom as a reading text also provides an opportunity for reflection based on their cultural background. Interpretations of tales that resonate with the conventions and values of their communities will inspire self-examination and self-reflection on cultural grounds. Thus, the use of LWB materials in a PBL model enhances not only linguistic and textual cognition but also critical consciousness and moral development. The pedagogical implications point to wider possibilities for introducing culturally relevant problem-based approaches to enhance students' reflective engagement in university reading activities.

The last practice shows that by incorporating locally based reading materials, we facilitate students' grasp of literacy as well as cultural knowledge. The use of stories that resonate with local traditions, values, and worldviews enables students to reconnect with their cultural roots and to perceive the significance of indigenous knowledge in contemporary learning. For instance, Respondent 14 (R14) expressed, *"I feel proud that our local stories are used in the classroom because they teach important values that we sometimes forget."* This indicates that exposure to culturally grounded texts fostered a renewed sense of pride and belonging. Similarly, Respondent 30 (R30) stated, *"Before, I did not pay attention to our folklore, but now I see how meaningful it is for understanding our culture."* In this passage, her reading experience becomes a moment of cultural awakening and validation. Both responses imply that mining local wisdom into academic reading helps students better understand and build their character by developing an identity and respect for traditions.

These results align with the principles of culturally responsive pedagogy, which hold that learning is more meaningful when materials resonate with students' cultures and life experiences (Paris, 2012). A multicultural education perspective further notes that a culturally legitimate curriculum supports identity construction and gives students access to power as members of their community (Yelling et al., 2008). The blend of indigenous wisdom-based texts and the collaborative

inquiry process used in this study supported students in seeing their culture not just as a backdrop but as a repository of knowledge and ethics. This worked toward fostering an appreciation for working successfully in and with students' own culture as they engage critically with other ways of knowing (Ardhi et al., 2025). The inclusion of local wisdom in reading instruction also serves to counter the cultural dislocation pattern commonly found in higher education learning contexts, where knowledge items are alien or abstract (Manuhutu et al., 2025b). This experience gives students a sense of legitimacy for their cultural narratives and serves as an intellectually stimulating learning resource. The successful implementation of local wisdom in the materials used for this study has implications that it is not only conducive to improving reading comprehension skills but also to enhancing readers' sense of identity, cultural continuity, and moral appreciation in holistic literacy education in globalizing yet culturally diverse academic settings.

Generally, the qualitative results support the quantitative results, showing that locally developed reading materials lead to successful improvements in students' reading comprehension through a PBL approach. Students reported greater enjoyment while reading and were better able to grasp the texts thanks to the material's cultural and situational proximity. The PBL model contributed to the type of critical dialogue, student-to-student work, and engagement with subject matter that could support meaning construction beyond literal comprehension. The indigenous nature of the resources also provided a sense of pride and cultural identity, making reading more than just a cognitive exercise but an affirmation of identity. These qualitative findings are supported by strong pre-post and N-Gain gains, indicating both cognitive and affective effectiveness. The intersection of these two types of data suggests that combining local context with problem-based pedagogy offers a resourceful way to foster readers' meaningful comprehension.

Increases in students' reading comprehension reflect how recently the content was used to learn. Local wisdom-based texts feature settings, values, or moral messages, and situations (contexts) that align with those students encounter in their daily lives, so learners can easily relate new knowledge to their prior experiences. According to Schema Theory, comprehension occurs when readers bridge the text's content with existing cognitive structures (Carrell & Eisterhold, 1983). This perspective is promoted by the belief that learning occurs to a greater extent when knowledge development is supported in meaningfully socially and culturally patterned environments for students (Cope & Kalantzis, 2000; Muhria et al., 2025). The presence of local narratives, lore, and cultural issues in this research serves as a mediating context that promotes active learning among pupils, resulting in a more profound and reflective comprehension.

The worked examples based on the PBL concept greatly contributed to the success of this initiative, with its stages: problem orientation, organization of knowledge, guided inquiry, and presentations of results and reflections. The series of activities fostered higher-order thinking and students' active, collaborative learning. Learners were not merely to take the text in, but to engage with it through questioning, reflecting on ideas, and connecting it to the knowledge they had gained from reading. This engagement pattern provided a reason for the observed large gain in comprehension skills in the post-test. These results are consistent with the argument that PBL enhances critical thinking, problem-solving, and reflection competencies (Azzahra & Nurkamto, 2024). In this study, the model helped the students link the reading comprehension activities they were asked to complete with real-life situations situated in “local” culture, and, as such, makes theoretical concepts relevant to life contexts, thus enhancing understanding of the content and reinforcing retrieval from memory.

The integration of local wisdom-based materials with a Problem-Based Learning model is effective in enhancing students' reading comprehension. The approach links the learning context with cultural practices through which young people teach themselves to read, thereby making reading

activities meaningful, reflective, and responsive for social groups otherwise disengaged from schools. These results suggest that heightening local context in higher education curricula could improve literacy skills and promote culturally connected intellectual engagement. This study's findings provide strong evidence of affirmative responses to the research questions and suggest that a similar approach could be successfully used in teaching reading at the university level as well.

CONCLUSION

Based on the results and discussion, it is clear that the use of local wisdom-based reading materials is effective in improving students' reading comprehension in the Problem-Based Learning (PBL) model. The significant post-test score growth, substantiated by high N-Gain values, demonstrates quantifiable cognitive development, whereas the qualitative findings identify enhanced engagement, critical thinking skills, collaboration, and cultural understanding. The results have supported the idea that learning packages based on students' cultural backgrounds are more meaningful and motivating for reading comprehension, which, in turn, allows for deeper understanding and reflection. The incorporation of local wisdom and PBL is beneficial for both cognitive and affective learning. Students can better comprehend other texts, preserve their cultural integrity, and appreciate indigenous values. From an academic perspective, this study contributes to the empirical evidence base supporting culturally responsive pedagogy and provides a 'takeaway' example of how traditional wisdoms might be incorporated into contemporary educational bodies. These results illustrate how culturally based practices and problem-based inquiry can be a transformative way to improve understanding, analysis, and cultural sustainability in higher education.

DECLARATION OF GENERATIVE AI

The authors declare that no generative AI or AI-assisted technologies were used in the writing process of this manuscript.

CONFLICTING INTEREST STATEMENT

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

FUNDING INFORMATION STATEMENT

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

REFERENCES

Abidin, Z., Sutama, S., Herman, T., Jupri, A., Farokhah, L., Apuanor, A., & Sonedi, S. (2021). Gifted Children's Mathematical Reasoning Abilities on Problem-Based Learning and Project-Based Learning Literacy. In *Journal of Physics: Conference Series* (Vol. 1720, No. 1, p. 012018). IOP Publishing.

Aikenhead, G.S. (2006). *Science Education for Everyday Life: Evidence-Based Practice*. Teachers College Press.

Ardhi, M. A., Dewi, D. S., & Adam, A. (2025). Exploring the Correlation Between Cultural Intelligence and Writing Performance Among EFL Learners. *Language and Education Journal, 10*(1), 123–139.

Azzahra, N. R., & Nurkamto, J. (2024). How Do EFL Teachers Navigate Problem-Based Learning in Indonesian Classrooms? *Voices of English Language Education Society, 8*(3), 727–738.

Benaired, A., & Reguieg, N. B. (2024). Enhancing EFL Learners' Communicative Skills Through Dramatisation of Lessons. *Journal of Languages and Translation, 4*(2), 203–210.

Carrell, P. L., & Eisterhold, J. C. (1983). Schema Theory and ESL Reading Pedagogy. *TESOL Quarterly, 17*(4), 26–46.

Cope, B., & Kalantzis, M. (Eds.). (2000). *Multiliteracies: Literacy Learning and the Design of Social Futures*. Routledge.

Ebikiemo, F. (2023). Contextual Learning Approach: A Tool for Enhancing Critical Thinking Skills Amongst Learners. *Central Asian Journal of Social Sciences and History, 4*(5), 72–82.

Erten, İ. H., & Razı, S. (2009). The Effects of Cultural Familiarity on Reading Comprehension. *Reading in a Foreign Language, 21*(1), 60–77.

Fadilla, N., Nurlaela, L., Rijanto, T., Ariyanto, S. R., Rahmah, L., & Huda, S. (2021). Effect of Problem-Based Learning on Critical Thinking Skills. *Journal of Physics: Conference Series, 1810*(1).

Faridi, A. (2010). The Development of Context-Based English Learning Resources for Elementary Schools in Central Java. *Excellence in Higher Education, 1*(1–2), 23–30.

Febriani, E. R., Sudarmin, S., & Alimah, S. (2019). Local Wisdom Learning Approach Towards Students Learning Outcomes. *Journal of Primary Education, 8*(5), 197–205.

Güngör, M. N., Read, D., & Güngör, M. A. (2024). Navigating Materials Adaptation: English Teachers' Experiences in Turkish Secondary Schools. *The Literacy Trek, 10*(3), 261–282.

Hasnah, Y., Ginting, P., Saragih, M., Kharisma, A. J., & Sari, P. L. P. (2024). A Probe Into Local Cultural Values in Locally Produced EFL Textbooks in Indonesia. *Humanities, Arts and Social Sciences Studies, 24*(3), 648–661.

Hasyem, M., & Ferizaldi. (2022). Community Development Based on Local Wisdom (Study on BUMK Tirtona in Hakim Wih Ilang Village, Bandar District, Bener Meriah Regency). *Atlantis Press, 648*(ICoSPOLHUM 2021), 137–142.

Hmelo-Silver, C. E., & Barrows, H. S. (2006). Goals and Strategies of a Problem-Based Learning Facilitator. *Interdisciplinary Journal of Problem-Based Learning*, *1*(1), 4.

Jemal, A. (2017). Critical Consciousness: A Critique and Critical Analysis of the Literature. *Urban Review, 49*(4), 602–626.

Karomah, L., Masyuri, M., & Java, E. (2024). Cultural Resilience in the Era of Globalization: Maintaining Heritage And. *Proceedings of International Conference on Education, Society, and Humanity, 2*(2), 1635–1641.

Kundu, A., & Bej, T. (2025). Transforming EFL Teaching With AI: A Systematic Review of Empirical Studies. *International Journal of Artificial Intelligence in Education*.

Liu, Y., & Pásztor, A. (2022). Effects of Problem-Based Learning Instructional Intervention on Critical Thinking in Higher Education: A Meta-Analysis. *Thinking Skills and Creativity, 45*.

Manuhutu, N., Hartono, R., Faridi, A., & Sakhiyya, Z. (2025a). Developing Introverted and Extroverted Students' Descriptive Writing Through Kalesang Values and FRESH Technique. *4*, 302–313.

Manuhutu, N., Hartono, R., Faridi, A., & Sakhiyya, Z. (2025b). Integration of Maluku Local Wisdom "Kalesang" Values Through FRESH Technique in Writing Descriptive Text: Introvert and Extrovert Students' Point of View. *Educational Process: International Journal, 17*.

McVee, M. B., Dunsmore, K., & Gavelek, J. R. (2005). Schema Theory Revisited. *Review of Educational Research, 75*(4), 531–566.

Muhria, L., ZA, T., Erydani, V. A. C., Dewi, D. S., & Mahdi, M. A. (2025). Fostering Cross-Cultural Competence and Reading Comprehension Through Digital Shared Reading in an Indonesian EFL Classroom. *Journal of Innovation in Educational and Cultural Research, 6*(3), 635–644.

Mungmachon, M. R. (2012). Knowledge and Local Wisdom: Community Treasure. *International Journal of Humanities and Social Science, 2*(13), 174–181.

Paris, D. (2012). Culturally Sustaining Pedagogy: A Needed Change in Stance, Terminology, and Practice. *Educational Researcher, 41*(3), 93–97.

Patel, A. D. (2010). *Music, Language, and the Brain*. Oxford University Press.

Piaget, J. (1973). *To Understand Is to Invent: The Future of Education*. Grossman.

Poojar, B., Ommurugan, B., Adiga, S., Thomas, H., Sori, R. K., Poojar, B., Hodlur, N., Tilak, A., Korde, R., Gandigawad, P., In, M., Sleep, R., Albino, D., Rats, W., Article, O., Schedule, P., Injury, C. C., Sori, R. K., Poojar, B., … Gandigawad, P. (2017). Methodology Used in the Study. *Asian Journal of Pharmaceutical and Clinical Research, 7*(10), 1–5.

Rahmawati, Y., Ridwan, A., Faustine, S., & Mawarni, P. C. (2020). Pengembangan Soft Skills Siswa melalui Penerapan Culturally Responsive Transformative Teaching (CRTT) dalam Pembelajaran Kimia. *Jurnal Penelitian Pendidikan IPA, 6*(1), 86–96.

Septy, A. P. (2019). Developing Local Wisdom Content as Ideal ELT Materials for Indonesia in Globalization Era. *Proceedings of the 65th TEFLIN, 65*(1), 320–327.

Siregar, T. (2022). Pengembangan Model Pembelajaran Berbasis Masalah dalam Pembelajaran Matematika di Sekolah Dasar. *Jurnal Pendidikan Matematika, 10*(2), 123-134.

Song, X., Razali, A. B., & Jeyaraj, J. J. (2025). How Project-Based Learning Improves College EFL Learners' Critical Thinking Skills and Reading Comprehension Ability: A Case Study. *Language Teaching Research*.

Stanton, C. R., Hall, B., & Carjuzaa, J. (2019). The Digital Storywork Partnership: Community-Centered Social Studies to Revitalize Indigenous Histories and Cultural Knowledges. *Journal of Social Studies Research, 43*(2), 97–108.

Suhirman, S., Prayogi, S., & Asy'ari, M. (2021). Problem-Based Learning With Character-Emphasis and Naturalist Intelligence: Examining Students Critical Thinking and Curiosity. *International Journal of Instruction, 14*(2), 217–232.

Sukackė, V., Guerra, A. O. P. D. C., Ellinger, D., Carlos, V., Petronienė, S., Gaižiūnienė, L., ... & Brose, A. (2022). Towards Active Evidence-Based Learning in Engineering Education: A Systematic Literature Review of PBL, PjBL, and CBL. *Sustainability, 14*(21), 13955.

Sumarni, S., Darhim, D., Fatimah, S., Priatna, N., Anjelita, A., & Taufik, A. (2018). The Students' Mathematical Concept Understanding Ability Through Cooperative Learning Type Jigsaw Assisted Visual Media. In *Journal of Physics: Conference Series* (Vol. 1132, No. 1, p. 012051). IOP Publishing.

Suryanti, N., & Nurhuda, N. (2021). The Effect of Problem-Based Learning With an Analytical Rubric on the Development of Students' Critical Thinking Skills. *International Journal of Instruction, 14*(2), 665–684.

Utami, I. S., Vitasari, M., Langitasari, I., Sugihartono, I., & Rahmawati, Y. (2020). The Local Wisdom-Based STEM Worksheet to Enhance the Conceptual Understanding of Pre-Service Physics Teacher. *Jurnal Penelitian & Pengembangan Pendidikan Fisika, 6*(1), 97–104.

Yelland, N., Cope, B., & Kalantzis, M. (2008). Learning by Design: Creating Pedagogical Frameworks for Knowledge Building in the Twenty-First Century. *Asia-Pacific Journal of Teacher Education, 36*(3), 197–213.

Zainuri, B. N. S., Gunawan, Kosim, & Herayanti, L. (2025). The Effect of Problem-Based Learning E-Modules on Students' Science Process Skills. In *Journal of Physics: Conference Series* (Vol. 3132, No. 1, p. 012018). IOP Publishing.

Zhao, J. (2023). Innovative Design and Research on Cooperative Learning of English and a Second Foreign Language in a Multimedia Environment. *Eurasian Journal of Applied Linguistics, 9*(2), 88–105.