THE IMPLEMENTATION OF LITERACY-BASED TEAM-BASED LEARNING TO ENHANCE STUDENT ENGAGEMENT AMONG PRE-SERVICE ELEMENTARY SCHOOL TEACHERS

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Abstract
Low student engagement in higher education may limit students' participation, collaboration, and critical thinking. This study investigated the implementation of Team-Based Learning (TBL) integrated with literacy-based learning media to enhance student engagement in the Indonesian Language Skills for Elementary School course. A Classroom Action Research design based on the Kemmis and McTaggart model was implemented in two cycles involving 47 fourth-semester students in an Elementary School Teacher Education Program. Data were collected through classroom observations, literacy-based learning media assessments, student response questionnaires, and documentation, and were analyzed using descriptive quantitative and qualitative approaches. The findings showed that average student engagement increased from 59.43% in the pre-cycle to 75.00% in Cycle I and 91.29% in Cycle II. The quality of literacy-based learning media also increased from 74.33% to 91.33%. The findings suggest that integrating literacy activities throughout TBL encouraged behavioral, cognitive, and emotional engagement while enabling students to collaboratively develop literacy-based learning media. The study contributes a pedagogical perspective by positioning literacy activities as an instructional mechanism that facilitates collaborative knowledge construction and supports multidimensional student engagement. The approach provides a promising strategy for strengthening active and collaborative learning in teacher education.
Keywords: *Team-Based Learning; student engagement; literacy-based learning media; elementary school teacher education; Classroom Action Research.*

INTRODUCTION

Higher education in the twenty-first century is expected to develop graduates who possess not only academic knowledge but also critical thinking, creativity, communication, and collaboration skills. This expectation has encouraged a shift from teacher-centered instruction toward student-centered learning, in which students actively construct knowledge through reading, discussion, collaboration, problem-solving, and reflection. Active learning has been widely recognized as an effective approach for improving learning experiences and student performance (Prince, 2004; Freeman et al., 2014). More importantly, the quality of learning should also be reflected in students' engagement, which encompasses behavioral, cognitive, and emotional dimensions (Fredricks et al., 2004; Bond et al., 2020). Previous studies have shown that active learning, collaborative group work, timely feedback, scaffolding, and educational technology can contribute to stronger student engagement (Ridha et al., 2024; Emaliana et al., 2022). However, how instructional activities systematically promote multidimensional student engagement, particularly in teacher education, remains insufficiently explained.

This issue is particularly relevant in Elementary School Teacher Education (PGSD), where prospective teachers are expected to develop not only pedagogical knowledge but also the ability to design meaningful and learner-centered learning experiences. Such competence requires authentic learning experiences in which students actively construct knowledge, collaborate with peers, and develop

instructional products that can be applied in elementary school contexts. Literacy is particularly important in this process because contemporary literacy extends beyond reading and writing to include accessing, understanding, evaluating, integrating, and communicating information across learning contexts (UNESCO, 2021; OECD, 2023). Literacy-based learning media can therefore function not merely as instructional tools but also as learning resources that facilitate reading, information analysis, discussion, idea development, communication, and reflection. Integrating these activities into collaborative learning may provide opportunities for students to construct knowledge while simultaneously strengthening their behavioral, cognitive, and emotional engagement.

Nevertheless, preliminary observations in the Indonesian Language Skills for Elementary School course at Universitas Bina Bangsa Getsempena indicated that student engagement remained relatively low. Students tended to be passive during classroom activities, participated minimally in discussions, and often responded only when prompted by the lecturer. Group activities were also dominated by a small number of students, while other members contributed less actively. In addition, learning media were mainly limited to PowerPoint presentations and did not provide sufficient opportunities for students to read multiple learning resources, identify key information, analyze information, organize ideas, or communicate learning outcomes collaboratively. These conditions indicate a gap between the expectations of student-centered learning and actual classroom practices. Previous research has demonstrated that interactive learning media can enhance student engagement (Warsihna et al., 2024), while game-based learning media have been shown to improve engagement and learning outcomes (Prasetya & Syidada, 2026). However, these studies primarily position learning media as instructional products or delivery tools rather than as part of a collaborative process through which students construct knowledge.

Team-Based Learning (TBL) provides a potentially relevant instructional framework because it emphasizes teamwork, individual accountability, structured discussion, application of knowledge, and peer feedback. Previous studies have reported positive effects of TBL on academic achievement, learning satisfaction, teamwork, and academic performance (Espey, 2022; Vannini et al., 2024). However, much of the existing research has focused on learning outcomes, satisfaction, or collaborative performance, providing less explanation of how TBL contributes to the development of behavioral, cognitive, and emotional engagement. Similarly, previous studies on active and collaborative learning have generally examined instructional strategies, learning media, and engagement as separate components. Consequently, limited attention has been given to how literacy activities can be systematically embedded within TBL so that students are not only users of learning media but also active participants in reading, analyzing information, developing instructional products, presenting their work, and reflecting on their learning.

The present study addresses this gap by integrating literacy activities into every stage of TBL through the collaborative development of literacy-based learning media. In this approach, students engage sequentially in accessing learning resources, understanding and analyzing information, integrating ideas from multiple sources, developing learning media, communicating learning outcomes, and reflecting on the learning process. These activities are conceptualized as an instructional mechanism that facilitates collaborative knowledge construction and provides opportunities for behavioral, cognitive, and emotional engagement. This perspective is informed by Social

Constructivist Theory, which emphasizes that knowledge is constructed through social interaction, collaboration, and reflection (Vygotsky, 1978), and by the multidimensional conceptualization of student engagement proposed by Fredricks et al. (2004). Thus, rather than examining TBL and literacy-based learning as separate instructional components, this study examines their integration as a unified learning process.

The contribution of this study lies in providing an empirical account of how literacy activities embedded within TBL can support multidimensional student engagement while simultaneously producing literacy-based learning media. The study therefore moves beyond examining whether TBL improves engagement by focusing on the instructional processes through which reading, information analysis, collaborative discussion, media development, presentation, and reflection are incorporated into team-based learning. Accordingly, this study aims to investigate the implementation of Team-Based Learning integrated with the development of literacy-based learning media to enhance student engagement in the Indonesian Language Skills for Elementary School course.

METHOD

This study employed a Classroom Action Research (CAR) design adapted from the Kemmis and McTaggart model, consisting of four iterative stages: planning, action, observation, and reflection. The study was conducted in two cycles, with each cycle consisting of two meetings. The research was carried out during the second semester of the 2025/2026 academic year in the Elementary School Teacher Education (PGSD) Program, Faculty of Teacher Training and Education, Universitas Bina Bangsa Getsempena, Banda Aceh. The participants were 47 fourth-semester students enrolled in the Indonesian Language Skills for Elementary School course. The participants were selected based on preliminary classroom observations indicating relatively low student engagement. The students were organized into eight heterogeneous teams of five to six members to facilitate balanced participation, teamwork, and collaborative learning.

The intervention integrated Team-Based Learning (TBL) with the development of literacy-based learning media. The TBL implementation was adapted from the framework of Michaelsen et al. (2004) and Parmelee and Michaelsen (2010) and incorporated literacy activities throughout the learning process. The activities included team formation, individual preparation through reading learning resources, team discussion and analysis, collaborative application through learning-media development, presentation, peer feedback, and reflection. Each team developed one literacy-based learning medium related to the course content. The integration of these activities was intended to engage students in accessing, understanding, analyzing, integrating, and communicating information while working collaboratively.

Data were collected using four instruments: (1) a student engagement observation sheet, (2) a literacy-based learning media assessment rubric, (3) a student response questionnaire, and (4) documentation. The student engagement instrument was developed based on the behavioral, cognitive, and emotional dimensions of engagement proposed by Fredricks et al. (2004). The media assessment rubric evaluated six literacy-related criteria: accessing information, understanding information, analyzing information, integrating information, communicating information, and reflection. Each indicator was rated using a four-point scale ranging from Poor (1) to Very Good (4).

Before implementation, the research instruments were reviewed through expert judgment by two validators to assess the relevance, clarity, and adequacy of the

instrument items in relation to the research objectives. The instruments were revised based on the validators' feedback and subsequently considered suitable for data collection.

Classroom observations were conducted during the pre-cycle, Cycle I, and Cycle II by the researcher and a collaborating lecturer using the same observation sheet. The observations focused on students' participation, contribution to group tasks, involvement in learning activities, expression of ideas, information analysis, enthusiasm, and responsibility. The observation results were discussed after each cycle and used as the basis for reflection and subsequent instructional improvement.

Quantitative data were analyzed descriptively using percentages to compare student engagement across the pre-cycle, Cycle I, and Cycle II. The quality of literacy-based learning media was similarly analyzed using percentage scores for each assessment criterion. Qualitative data from observations, documentation, and reflections were analyzed using the interactive model of data reduction, data display, and conclusion drawing proposed by Miles, Huberman, and Saldaña (2014). Quantitative and qualitative findings were integrated during the reflection stage to evaluate the implementation and determine improvements for the subsequent cycle.

The intervention was considered successful when at least 75% of students achieved the Good category in student engagement and each team produced literacy-based learning media that fulfilled the established criteria for accessing, understanding, analyzing, integrating, communicating, and reflecting on information. The action was terminated after Cycle II because the established success criteria had been achieved

RESULTS AND DISCUSSION

The pre-cycle observations indicated that student engagement in the Indonesian Language Skills for Elementary School course was relatively low. Classroom activities were still largely lecturer-centered, while discussion participation was dominated by a small number of students. Several students contributed minimally to group tasks, and the learning media used provided limited opportunities for reading, analyzing information, organizing ideas, and communicating learning outcomes. The baseline assessment showed an overall student engagement score of 59.43%, categorized as Fair. The lowest score was observed in students' ability to express ideas (55%), while active participation throughout the learning process recorded the highest score (63%). Following the implementation of literacy-based Team-Based Learning (TBL), student engagement increased progressively across the two action cycles. The complete changes in the seven engagement indicators are presented in Table 1.

Table 1. Changes in Student Engagement across Research Cycles

Student Engagement Indicator	Pre-Cycle (%)	Cycle I (%)	Cycle II (%)
Active participation in group discussions	60	74	91
Contribution to task completion	58	72	90
Active participation throughout learning	63	78	93
Ability to express ideas	55	71	89
Ability to analyze information	57	73	90
Enthusiasm for participating in learning	62	80	94
Responsibility for assigned tasks and teamwork	61	77	92
Average	**59.43**	**75.00**	**91.29**

Table 4 shows a consistent improvement across all indicators. The average engagement score increased from 59.43% in the pre-cycle to 75.00% in Cycle I and 91.29% in Cycle II. The largest improvement was observed in students' enthusiasm for learning, which increased from 62% to 94%, followed by active participation throughout the learning process, which increased from 63% to 93%. Students' ability to express ideas, initially the lowest indicator at 55%, also increased substantially to 89% in Cycle II. These findings indicate that the intervention was associated with improvement not only in students' participation but also in their involvement in expressing ideas, analyzing information, assuming responsibility, and participating actively throughout the learning process.

The improvement in Cycle I, although substantial, did not indicate an equally distributed level of participation among all team members. Reflection at the end of Cycle I showed that some students still depended on more active group members and that literacy activities were concentrated mainly on reading and understanding information. Students' abilities to analyze and integrate information from multiple sources and to translate their understanding into learning media still required improvement. Consequently, Cycle II introduced clearer group roles, broader learning resources, more intensive guidance, and more structured feedback. These refinements were followed by further improvement in all engagement indicators.

The findings suggest that the improvement in engagement was associated with the structured integration of literacy activities into collaborative learning. Students were required to prepare individually, discuss and compare information within teams, develop learning media collaboratively, present their products, provide peer feedback, and reflect on the learning process. These activities created repeated opportunities for active participation and responsibility, while simultaneously requiring students to process and communicate information. Thus, the improvement was not limited to participation in group work but extended to cognitive and emotional aspects of engagement.

This finding is consistent with Fredricks et al. (2004), who conceptualized student engagement as comprising behavioral, cognitive, and emotional dimensions. It also supports Bond et al. (2020), who emphasized the importance of active participation, collaboration, and reflection in fostering student engagement in higher education. In the present study, these dimensions were incorporated into a single instructional process rather than being treated as separate outcomes. The literacy activities required students to participate behaviorally through discussion and task completion, cognitively through information analysis and idea development, and emotionally through enthusiasm, responsibility, and collaborative involvement.

The findings also extend previous research on Team-Based Learning. Espey (2022) found that individual engagement in TBL activities was associated with academic achievement, while Vannini et al. (2024) reported that repeated TBL implementation improved learning satisfaction, teamwork, and academic performance. The present study is consistent with these findings in demonstrating improved participation and collaboration; however, it adds a different emphasis by integrating literacy activities into the TBL process. Rather than treating teamwork as the primary mechanism of engagement, the intervention required students to read, analyze, discuss, synthesize, and communicate information as part of their collaborative work. This integration provides a pedagogical explanation of how TBL can create opportunities for multidimensional student engagement.

In addition to changes in student engagement, the intervention resulted in progressive improvement in the quality of literacy-based learning media developed by the student teams. The assessment focused on students' ability to incorporate literacy activities involving accessing, understanding, analyzing, integrating, communicating, and reflecting on information. The results are presented in Table 2.

Table 2. Changes in the Quality of Literacy-Based Learning Media

Assessment Criterion	Cycle I (%)	Cycle II (%)
Accessing Information	78	93
Understanding Information	76	92
Analyzing Information	72	90
Integrating Information	71	89
Communicating Information	79	94
Reflection	70	90
Average	74.33	91.33

The quality of the learning media increased from an average of 74.33% in Cycle I to 91.33% in Cycle II. In Cycle I, communicating information recorded the highest score (79%), whereas reflection recorded the lowest score (70%). Following the improvements introduced in Cycle II, all criteria reached the Very Good category, with communicating information obtaining the highest score (94%) and integrating information the lowest (89%). These results indicate that students progressively developed media that incorporated literacy activities more comprehensively rather than merely presenting course content.

The development of the media was also an important component of the learning process itself. Students searched for relevant resources, interpreted information, discussed and organized ideas, designed instructional materials, presented their products, received feedback, and revised their work. Therefore, the media were not simply final instructional products but also outcomes of a collaborative process involving information processing, decision making, communication, and reflection. This finding is consistent with the view that instructional media can support more active and learner-centered learning experiences (Mayer, 2021; Smaldino et al., 2019). It also corresponds with Arsyad (2023), who emphasizes the importance of learning media designed in accordance with instructional objectives in supporting interaction and active participation.

The eight teams produced different forms of literacy-based learning media according to the content of the Indonesian Language Skills for Elementary School course.

Table 3. Literacy-Based Learning Media Developed by Student Teams

Course Area	Literacy-Based Learning Media
Listening	Literacy-Based Big Book
Speaking	Literacy-Based Flash Cards
Reading	Literacy-Based Pop-Up Book
Writing	Literacy-Based Writing Module
Listening	Literacy-Based Electronic Student Worksheet (E-LKPD)
Reading	Literacy-Based Interactive Canva Learning Media
Writing	Literacy-Based Digital Booklet

The diversity of the products demonstrates that students were able to translate literacy principles into different instructional media formats. More importantly, the products emerged through collaborative processes involving resource exploration, content analysis, media design, presentation, feedback, and revision. Thus, the intervention provided students with opportunities to experience the development of instructional media as an authentic collaborative learning task.

The central finding of this study is that the integration of literacy activities into TBL was accompanied by simultaneous improvement in student engagement and the quality of literacy-based learning media. The intervention required students to move through a sequence of individual preparation, collaborative discussion, information analysis, media development, presentation, peer feedback, and reflection. This sequence provided continuous opportunities for students to engage with information and with one another rather than functioning primarily as passive recipients of lecturer-delivered content.

From a Social Constructivist perspective, these findings can be understood as the result of learning through social interaction, dialogue, collaboration, and shared reflection (Vygotsky, 1978). Individual reading and information processing provided students with initial knowledge, while team discussions enabled them to compare interpretations, negotiate meaning, and reach shared understandings. The subsequent development and presentation of learning media required students to apply and communicate their collective understanding. In this sense, literacy activities functioned as an instructional mechanism that facilitated collaborative knowledge construction within TBL. This interpretation is consistent with the multidimensional conception of engagement proposed by Fredricks et al. (2004), in which behavioral, cognitive, and emotional engagement are interconnected aspects of students' involvement in learning.

The findings also provide a useful distinction from studies that have examined TBL, active learning, or learning media independently. Previous research has established that TBL can support academic performance, teamwork, and learning satisfaction (Espey, 2022; Vannini et al., 2024), while research on interactive and game-based media has demonstrated their potential to increase student engagement (Warsihna et al., 2024; Prasetya & Syidada, 2026). Murdiono (2024) similarly demonstrated that collaborative learning through the Jigsaw model can improve participation and interaction. The present study extends these findings by positioning students not only as users of instructional media but also as developers of literacy-based media through a structured team-based process.

This distinction is important for teacher education. Prospective teachers need opportunities not only to acquire theoretical knowledge but also to practice selecting information, organizing content, designing instructional resources, communicating ideas, and evaluating learning products. The literacy-integrated TBL approach brings these activities together within one collaborative learning process. The resulting increase in engagement and media quality therefore suggests that the approach may provide a practical strategy for creating more active and authentic learning experiences in teacher education.

From a theoretical perspective, the study contributes to the application of TBL by emphasizing the role of literacy activities in connecting individual preparation, collaborative interaction, information processing, and instructional-product development. Rather than claiming statistical mediation, the findings suggest that literacy activities provide an instructional mechanism through which collaborative learning can support multidimensional student engagement. This interpretation extends the application of Social Constructivism and the multidimensional engagement framework by showing how structured literacy activities can be embedded within team-based learning.

From a practical perspective, the findings indicate that integrating literacy activities into TBL can simultaneously support student engagement and the development of instructional media. This is particularly relevant to teacher education because the learning process itself models the kind of active, collaborative, literacy-oriented learning that prospective teachers may later implement in elementary classrooms. Nevertheless, the findings should be interpreted within the context of a CAR conducted with 47 students in one course and institution. The absence of a comparison group and the use of descriptive analysis limit the extent to which the observed improvement can be attributed exclusively to the intervention or generalized to other contexts. Future research should therefore examine the approach with larger and more diverse

samples and, where appropriate, comparative or quasi-experimental designs.

This study has several limitations. First, the study involved 47 students from a single teacher education program and one course, which limits the transferability of the findings to other contexts. Second, the Classroom Action Research design did not involve a comparison group; therefore, the observed improvement cannot be attributed exclusively to the intervention. Third, student engagement was primarily assessed through classroom observation, which may be subject to observer-related bias. Future studies should examine the approach across multiple institutions and educational contexts using comparative or quasi-experimental designs and additional measures of engagement.

CONCLUSION

The implementation of Team-Based Learning (TBL) integrated with the development of literacy-based learning media effectively enhanced students' behavioral engagement, cognitive engagement, and emotional engagement in the Indonesian Language Skills for Elementary School course. The improvement was reflected in students' increased participation in collaborative discussions, stronger responsibility for group tasks, improved ability to analyze information, greater confidence in expressing ideas, and higher levels of enthusiasm throughout the learning process. Throughout the implementation of Team-Based Learning, students actively engaged in sequential literacy activities, including reading learning resources, identifying key information, analyzing information, organizing ideas collaboratively, developing literacy-based learning media, presenting learning products, and reflecting on their learning experiences. These interconnected literacy activities functioned as the instructional mechanism that mediated collaborative knowledge construction, thereby transforming collaborative interaction into multidimensional student engagement while simultaneously producing literacy-based learning media that met the established quality criteria and can serve as an alternative instructional resource for the Indonesian Language Skills for Elementary School course.

The new scientific knowledge contributed by this study lies in explaining how literacy activities mediate collaborative knowledge construction and transform collaborative interaction into multidimensional student engagement within Team-Based Learning. From a theoretical perspective, this study extends the application of Team-Based Learning and Social Constructivist Theory by providing a conceptual explanation of how sequential literacy activities—including reading, information analysis, collaborative discussion, media development, presentation, and reflection—facilitate collaborative knowledge construction and strengthen behavioral engagement, cognitive engagement, and emotional engagement. This conceptual explanation advances previous Team-Based Learning research by explaining not only that Team-Based Learning enhances student engagement but also how multidimensional student engagement develops through literacy activities embedded within collaborative learning.

From a practical perspective, the findings provide an alternative instructional strategy for teacher education programs by integrating literacy activities into every stage of Team-Based Learning. This approach not only enhances student engagement but also supports the development of prospective elementary school teachers' pedagogical competence through the collaborative development of literacy-based learning media. Future research is recommended to examine the implementation of this instructional model across different courses, academic disciplines, and educational levels using larger and more diverse participant samples. In addition, future studies may investigate the integration of digital

technologies and Artificial Intelligence (AI) to develop more adaptive literacy-based collaborative learning models that respond to the evolving demands of twenty-first-century education.

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