

Development of A Project Based Learning Model Based on Local Cultural Literacy to Improve Students' Critical Thinking Abilities

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Abstract: This study aims to develop a Project-Based Learning (PjBL) model based on local cultural literacy that meets the criteria of validity, practicality, and effectiveness in improving students' critical thinking skills in Indonesian language learning at the junior high school level. The background of this study is based on the low critical thinking skills of students, which are still influenced by the dominance of conventional learning that is textual in nature, lacks context, and does not optimally utilize the potential of local culture as a meaningful learning resource. In fact, Indonesian language learning has great opportunities to integrate local cultural values in the development of higher-order thinking skills. The results showed that the PjBL learning model based on local cultural literacy had excellent validity and practicality based on expert assessments and positive responses from teachers and students. The effectiveness test also showed a significant increase in students' critical thinking skills after the implementation of the learning model, with N-Gain scores in the moderate to high category. These findings indicate that the integration of PjBL with local cultural literacy is capable of creating contextual, meaningful Indonesian language learning that is oriented towards strengthening critical thinking skills, while also supporting the implementation of the Merdeka Curriculum and strengthening the Pancasila Student Profile.

Keywords: Project Based Learning, Local Cultural Literacy, Critical Thinking Skills, Indonesian Language Learning, Independent Curriculum (Merdeka Curriculum)

Introduction

Critical thinking skills are essential competencies in 21st-century education that serve as the foundation for decision-making, problem-solving, and lifelong learning. Critical thinking is not only related to higher-order cognitive abilities, but also includes the ability to analyze information, evaluate arguments, and reflect on meaning logically and contextually (Facione, 2015) (Ennis, 2018). In the context of national education,

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One learning model that is considered effective in developing critical thinking skills while integrating cultural context is Project Based Learning (PjBL). PjBL places students at the center of learning through involvement in authentic projects that require investigation, collaboration, and reflection (Thomas, 2000) (Bell, 2010). A number of studies show that PjBL can significantly improve critical thinking skills, creativity, and 21st-century skills (Adeline, 2024) (Prasetya & Munfarikhatin, 2025). Based on this background, this study aims to develop a valid, practical, and effective Project-Based Learning model based on local cultural literacy to improve the critical thinking skills of junior high school students.

Methodology

This study was designed using a research and development (R&D) approach aimed at producing an educational product in the form of a learning model that is not only theoretically sound but also empirically tested in a real learning context. The R&D approach was chosen because this study did not stop at testing the relationship between variables but focused on a systematic process of designing, developing, validating, and implementing a Project-Based Learning model based on local cultural literacy to improve students' critical thinking skills. According to Borg and Gall (2003), development research is highly relevant in education when the main objective of the research is to produce applicable and sustainable learning innovations. The development model used in this study is the Four-D model proposed by Thiagarajan, Semmel, and Semmel (1974), which includes the stages of define, design, develop, and disseminate. The Four-D model was chosen because it has a systematic and flexible development flow and has been widely used in research on the development of learning tools and models in Indonesia and internationally (Irawan et al, 2018) (Akker et al, 2013). In addition, this model allows researchers to test the validity, practicality, and effectiveness of products in a gradual and controlled manner.

The define stage aims to comprehensively identify and analyze learning needs. At this stage, researchers conducted a preliminary analysis of the Indonesian language learning conditions at SMP Negeri 1 Anggeraja, Enrekang Regency. The analysis included curriculum analysis, student characteristic analysis, basic competency and learning achievement analysis, and socio-cultural context analysis of the school environment. The curriculum analysis was conducted to ensure that the learning model developed was in line with the Merdeka Curriculum and the principles of the Pancasila Student Profile (Kemendikbudristek, 2022). Meanwhile, the analysis of student characteristics was conducted to understand the initial level of critical thinking skills, learning styles, and the socio-cultural background of students, which formed the basis for the design of the learning model. The analysis of the local cultural context in the define stage was carried out through field observations, interviews with Indonesian language teachers, community leaders, and documentation of local culture in Enrekang Regency. The data obtained showed that the students' environment was rich in traditions, folklore, social practices, and cultural products that were relevant as sources of local cultural literacy learning. These findings reinforce the view that learning that integrates local culture has great potential to increase student engagement and build meaningful learning (Tilaar, 2017) (Alwasilah, 2018).

The design stage is the stage of designing a Project Based Learning model based on local cultural literacy. At this stage, the researcher developed a conceptual framework for the learning model that included learning objectives, PjBL syntax, the roles of teachers and students, the social learning system, reaction principles, and the learning support system. The model design refers to the main characteristics of PjBL as stated by Thomas (2000) and Bell (2010), namely authentic problem-based learning, in-depth investigation, collaboration, and real products as learning outcomes. The PjBL syntax developed in this study is specifically designed to integrate local cultural literacy into each stage of learning. The learning project is directed at exploring local cultural phenomena relevant to Indonesian language material, such as descriptive texts, procedural texts, explanatory texts, and narrative texts. Students are actively involved in identifying cultural issues, designing literacy projects, collecting data through observation and interviews, processing information, and presenting project results in the form of communicative literacy products. This design is in line with the social constructivist view that emphasizes the importance of contextual and collaborative learning experiences in constructing knowledge (Vygotsky, 1978).

In addition to designing the learning model, supporting learning tools were also developed during the design stage, such as learning modules, student worksheets, critical thinking assessment instruments, and model implementation guidelines for teachers. The critical thinking assessment instruments were developed based on the critical thinking indicators proposed by Facione (2015), which include the abilities of analysis, evaluation, inference, explanation, and self-reflection. The instruments were developed with consideration of content validity and suitability for junior high school students. The development stage is the stage of product development and validation. At this stage, the learning model and supporting tools that have been designed are validated by experts consisting of Indonesian language experts, learning design experts, and language experts. The validation process aims to assess the validity of the model from conceptual, pedagogical, and linguistic aspects. According to Akker et al. (2013), expert validation is an important step in development research to ensure that the resulting product has a strong theoretical basis and is feasible for implementation.

The validation results are used as a basis for revising and refining the learning model. Once validated, the learning model is tested on a limited basis in the classroom to assess its practicality and feasibility. The limited trial was conducted by involving Indonesian language teachers and students as research subjects. Practicality data was collected through observation of learning implementation, teacher and student response questionnaires, and field notes. The practicality of the model was assessed based on ease of use, syntactic clarity, and the suitability of the model to classroom conditions (Nieveen, 2013). The dissemination stage is the stage of disseminating and testing the effectiveness of the learning model. At this stage, the PjBL model based on local cultural literacy was implemented in Indonesian language learning using a simple experimental design in the form of a one-group pretest-posttest design. This design was chosen to determine the increase in students' critical thinking skills after participating in learning with the developed model (Creswell, 2018). Before learning began, students were given a pretest to measure their initial critical thinking skills. After the learning process was completed, students were given a posttest with equivalent instruments.

The subjects of this study were eighth-grade students at SMP Negeri 1 Anggeraja, Enrekang Regency, who were selected purposively by considering the suitability of class characteristics with the research objectives. The selection of the research location was based on the results of a needs analysis which showed that the school had strong local cultural potential and a need for innovation in Indonesian language learning oriented towards the development of critical thinking. The data collection techniques in this study included tests, questionnaires, observation, and documentation. Tests were used to measure students' critical thinking skills before and after the implementation of the learning model. Questionnaires were used to collect data on teachers' and students' responses to the practicality and acceptability of the model. Observations were conducted to assess the implementation of the learning syntax and student activities during the learning process. Documentation was used to support research data in the form of photos of activities, student project results, and learning documents.

Data analysis was conducted quantitatively and qualitatively. Validity and practicality data were analyzed using descriptive statistical techniques to obtain average scores and feasibility categories. Effectiveness data were analyzed using a paired t-test to determine significant differences between the pretest and posttest scores of students' critical thinking skills. In addition, N-Gain calculations were performed to determine the level of improvement in critical thinking skills based on the criteria proposed by Hake (1999). Qualitative data from observations and field notes were analyzed descriptively to provide an in-depth picture of the learning model implementation process. Thus, this research method was designed systematically to ensure that the developed Project-Based Learning model based on local cultural literacy had adequate validity, practicality, and effectiveness. The research and development approach used enabled researchers to not only produce learning innovations but also make significant scientific contributions to the development of contextual learning based on local culture to improve students' critical thinking skills.

Result and Discussion

Expert validation results show that the PjBL model based on local cultural literacy has a very high validity level with an average score of 89.6%. This finding is in line with previous studies which state that the development of culture-based models has a strong conceptual foundation when linked to the local context of students (Akharraz, 2021) (Alhafidz et al, 2025). From a practical perspective, the pilot test results showed a positive response from teachers and students with an average score of 87.4%. Teachers assessed that the model was easy to implement and relevant to learning needs, while students showed active involvement and high enthusiasm in culture-based project learning. These findings support the results of Bell (2010) and Adeline (2024), who stated that PjBL increases participation and motivation to learn. The effectiveness test showed a significant increase in students' critical thinking skills, with a pretest average score of 52.12 and a posttest average score of 81.53 ($p < 0.05$). The N-Gain value of 0.61 falls into the effective category. The most notable improvement occurred in the indicators of analysis, evaluation, and explanation, which are the core of critical thinking according to Facione (2015).

Discussion

Expert validation results also show that the designed learning syntax is capable of facilitating critical thinking stages systematically. Each stage in PjBL, starting from the identification of cultural issues, project planning, data collection and analysis, to the presentation and reflection of project results, is in line with the critical thinking indicators proposed by Facione (2015). Thus, this learning model is not only valid in terms of structure, but also functionally relevant in developing students' critical thinking skills. In addition to validity, the results of the study also show that the learning model has a high level of practicality. Practicality was assessed through limited trials involving teachers and students in the learning process. The results of observations of the implementation of learning show that the entire PjBL syntax based on local cultural literacy can be implemented well by teachers. Teachers are able to understand the learning flow, manage project activities, and facilitate student discussions and reflections effectively. Teachers' responses to the learning model showed that it was easy to implement, flexible, and suited to the characteristics of students and classroom conditions.

Students' responses to the learning model were also very positive. Students stated that learning had become more interesting, challenging, and meaningful because they were directly involved in exploring local culture, which was close to their lives but rarely addressed in formal learning. The active involvement of students in local cultural projects creates a collaborative learning atmosphere and encourages constructive social interaction. These findings are in line with previous research results which state that PjBL is able to increase student motivation and learning engagement through authentic and collaborative activities (Adeline, 2024) (Prasetya & Munfarikhatin, 2025). From a social constructivist perspective, the high level of practicality of this learning model shows that project-based learning and local culture can create a learning environment that supports active knowledge construction. Vygotsky (1978) emphasizes that social interaction and cultural context are key factors in the learning process. Through local cultural projects, students interact with their peers, teachers, and social environment to build a deeper and more reflective understanding of the learning material.

The effectiveness of the learning model was the main focus of this study, particularly in relation to improving students' critical thinking skills. The results of the analysis showed a significant increase in critical thinking skills after students participated in learning using the Project-Based Learning model based on local cultural literacy. The average score for students' critical thinking skills on the pretest was in the low to moderate category, while the posttest scores showed a significant increase and were in the high category. The paired t-test results showed a statistically significant difference between the pretest and posttest scores, indicating that the developed learning model was effective in improving students' critical thinking skills. In addition, the N-Gain calculation results showed that the increase in critical thinking skills was in the moderate to high category. The most notable improvement was seen in the indicators of analysis and evaluation skills, which reflect students' ability to identify problems, assess information, and provide logical reasons for a cultural phenomenon. These findings are in line with Facione's (2015) view that analysis and evaluation skills are at the core of critical thinking and can be developed through learning that requires active and reflective engagement.

The results of this study are also consistent with the findings of UNESCO (2024), which emphasizes that cultural literacy in education can strengthen critical thinking skills by encouraging students to understand and evaluate socio-cultural realities in depth. Through local cultural projects, students not only learn cultural facts but also analyze the meaning, value, and relevance of these cultures in modern society. This process encourages students to think critically, reflectively, and contextually.

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Conclusion

Based on the results of the research and discussion described above, it can be concluded that the development of a Project Based Learning model based on local cultural literacy is a relevant and effective effort to improve students' critical thinking skills in Indonesian language learning at the junior high school level. The learning model developed through a research and development approach using the Four-D model has been proven to meet the criteria for quality educational products, namely validity, practicality, and effectiveness. The validity of the model is reflected in the suitability of the theoretical basis, the syntactic structure of learning, and the relevance of the model to the curriculum and student characteristics. The practicality of the model is evident in its ease of implementation by teachers and the positive response of students to the learning process. The effectiveness of the model is proven by the significant improvement in students' critical thinking skills after participating in learning with the developed model.

Conceptually, the findings of this study confirm that Project Based Learning is an adaptive and contextual learning model, especially when combined with local cultural literacy. The integration of local culture as a learning resource provides an authentic context that enables students to construct knowledge in a meaningful and reflective manner. This is in line with the social constructivist view that emphasizes that the learning process takes place through social interaction and is mediated by cultural context (Vygotsky, 1978). By utilizing local culture as the object of the learning project, students not only develop cognitive abilities but also strengthen their cultural awareness and social identity. The improvement in students' critical thinking skills found in this study shows that project-based learning and local culture can encourage students to actively engage in the process of analysis, evaluation, and reflection. Students do not simply receive information, but are involved in the process of searching for, processing, and presenting information that requires higher-order thinking skills. These findings reinforce the opinions of Facione (2015) and Ennis (2018), who state that critical thinking skills can be optimally developed through challenging, contextual, and problem-solving-oriented learning.

From the perspective of Indonesian language learning, the results of this study show that local cultural literacy can be an effective medium for developing language skills and critical thinking skills. Through cultural literacy projects, students learn to understand, analyze, and produce texts that are relevant to the socio-cultural realities around them. Learning becomes more meaningful because students are able to relate the subject matter to their life experiences. This is in line with the views of Alwasilah (2018) and Tilaar (2017), who emphasize the importance of local culture-based education in developing contextual learning oriented towards character building. The practical implications of this research are quite significant for teachers, schools, and education policy makers. For teachers, the Project Based Learning model based on local cultural literacy can be used as an alternative innovative learning strategy to improve the quality of Indonesian language learning. This model provides space for teachers to innovate in designing contextual, collaborative learning that is oriented towards the development of critical thinking skills. For schools, the application of this model can support the creation of an active, creative learning culture rooted in local cultural values. Meanwhile, for education policy makers, the results of this study can be taken into consideration in the development of contextual learning policies that support the implementation of the Merdeka Curriculum and the strengthening of the Pancasila Student Profile (Kemendikbudristek, 2022).

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