



Integrating Lebak Culture in Center-Based Learning to Foster Early Childhood Critical Thinking

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ABSTRACT

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This qualitative study explored how Lebak culture was introduced through center-based learning and how teacher-guided activities facilitated critical thinking among young children. The study was conducted in one early childhood education classroom in Lebak Regency, Indonesia, involving two teachers and fifteen children aged 5–6 years selected purposively. Data were generated through classroom observations, interviews, and documentation. They were analyzed using Miles and Huberman's interactive model, while Facione's six critical thinking indicators guided the interpretation of children's classroom responses. Findings showed that Lebak culture was incorporated systematically through planning, implementation, and learning evaluation. During planning, teachers developed culturally grounded materials by considering children's interests, experiences, and questions and collaborating with colleagues. During implementation, four learning centers used concrete materials, videos, discussion, and creative activities to explore local cultural knowledge. Teacher-guided questions encouraged children to observe, compare, discuss, justify, and reconstruct their cultural experiences. These interactions created opportunities for six manifestations of critical thinking: interpretation, analysis, evaluation, inference, explanation, and self-regulation. The findings suggest that local culture can function as a meaningful cognitive resource when teachers move beyond factual transmission and provide structured opportunities for inquiry and dialogue. The study recommends developing classroom observation guidelines and professional development programs to help teachers facilitate, recognize, and document children's critical thinking during culturally responsive learning. Because the study involved one classroom and a small purposive sample, its

findings should be interpreted contextually rather than generalized broadly to all early childhood education settings in Indonesia.

Keywords

Center-Based Learning
Critical Thinking
Early Childhood Education
Local Culture
Teacher-Guided
Interaction

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Introduction

Developing higher-order thinking skills has become an important goal of early childhood education in the 21st century. Early childhood education (ECE) plays a crucial role in shaping children's character, values, and thinking skills from an early age. One of the learning approaches widely implemented in early childhood settings is the center-based learning model, also known as Beyond Centers and Circle Time (BCCT). This model emphasizes structured, play-based, and child-centered learning activities that allow children to explore ideas through meaningful experiences. Through these learning experiences, children are encouraged not only to develop physical and socio-emotional skills but also to strengthen cognitive abilities, including critical thinking skills [1].

Critical thinking is not a skill that automatically develops in adulthood but can be cultivated from an early age through appropriate learning experiences [2,3]. The preschool and early school years represent an important developmental period during which children begin to demonstrate the ability to question, reason, and evaluate information in simple ways [4,5]. Several studies have shown that young children are capable of demonstrating early forms of critical thinking when provided with opportunities to explore, discuss, and reflect on their experiences [6,7].

The development of critical thinking has therefore become an important focus in contemporary education. According to Facione [8], critical thinking involves several cognitive skills, including interpretation, analysis, evaluation, inference, explanation, and self-regulation. Although this framework is frequently applied in higher education contexts, its indicators can also serve as a conceptual guide for examining the development of critical thinking in early childhood learning environments. Contextual and experience-based learning approaches, such as center-based learning, provide meaningful opportunities for children to engage in reasoning, discussion, and reflection during learning activities

In addition to appropriate learning models, the integration of relevant learning content also plays an important role in supporting children's thinking development. Local culture can

serve as a contextual learning resource because it reflects children's daily experiences and social environments. Learning materials that are culturally familiar to children can enhance engagement and help them construct deeper understanding through real-life contexts. In this regard, the cultural heritage of Lebak Regency—including traditional clothing, leuit (rice barns), and traditional foods—provides rich cultural meanings and life values that can be explored through learning activities in early childhood education settings [9].

Although previous studies have examined the importance of critical thinking in early childhood and the use of cultural elements in learning, research specifically analyzing the integration of local culture within center-based learning to support children's critical thinking development remains limited. In particular, few studies have examined how such learning experiences contribute to the development of critical thinking skills based on Facione's framework in early childhood contexts.

Therefore, this study aims to:

- Describe how Lebak culture is introduced through the center-based learning model in early childhood education.
- Analyze the contribution of this cultural introduction to the development of early childhood critical thinking skills based on Facione's six indicators.

Material and Methods

This study employed a qualitative descriptive approach to explore the process of introducing Lebak culture through a center-based learning model and how teacher-guided learning activities facilitated the emergence of children's critical thinking during classroom interactions. The research was conducted in an early childhood education institution located in Rangkasbitung District, Lebak Regency, Banten, Indonesia. The institution implements the Merdeka Curriculum and has been designated as a Sekolah Penggerak (Driving School), where the center-based learning model is used as the primary instructional approach.

The participants were selected using purposive sampling. Although the institution had two Group B classrooms, Group B1 was purposively selected in consultation with the school principal because it was considered appropriate for implementing the local culture-based learning activities. The study was conducted in the selected classroom, which consisted of 15 children aged 5–6 years and two classroom teachers who facilitated the center-based learning activities. The study focused on a thematic learning unit titled “My Country” (Negeraku) with the subtopic “Baduy Culture.”

Data collection was conducted through intensive classroom observations carried out over four consecutive days during the implementation of the thematic learning activities. During the observation, the researcher documented teacher–student interactions, the use of instructional media, and the application of the center-based learning model in integrating

elements of Lebak culture into classroom activities. In addition, semi-structured interviews were conducted with the two classroom teachers to obtain deeper insights into the planning, implementation, and assessment of learning activities related to cultural introduction and children's critical thinking skills. Supporting documentation in the form of photographs, videos, and field notes was also collected to enrich the data sources and strengthen data triangulation.

The collected data were analyzed using the interactive model proposed by Miles and Huberman, which consists of three main stages: data reduction, data display, and conclusion drawing. During the data reduction phase, data obtained from classroom observations, teacher interviews, and supporting documentation were reviewed, coded, and categorized based on key themes, including cultural introduction planning, learning implementation, and teacher stimulation strategies and manifestations of children's critical thinking during classroom interaction. Facione's six critical thinking indicators [10], —interpretation, analysis, evaluation, inference, explanation, and self-regulation—served as an analytical framework for identifying and interpreting manifestations of children's critical thinking during classroom interactions.

The primary unit of analysis was the classroom learning process, particularly teacher–child interactions occurring during the learning activities. Observation notes were coded according to the six indicators to identify manifestations of critical thinking elicited through teacher-guided learning activities. The coding process involved matching children's verbal responses and observed teacher–child interaction episodes with the operational characteristics of each of Facione's six critical thinking indicators, enabling the researcher to classify the observed manifestations systematically. Interview data were used to confirm and enrich the interpretation of the observational findings, while documentation, including photographs, videos, and field notes, served as supporting evidence throughout the analysis. Rather than assessing each child's individual level of critical thinking, the analysis focused on how teacher-guided learning activities facilitated the emergence of critical thinking during classroom interactions. Representative examples were selected to illustrate each of Facione's six indicators.

Results

A. Learning Planning for Culture-Based Activities

In planning lessons for introducing Lebak culture—specifically Baduy culture—teachers designed learning plans based on children's responses and questions. For instance, the Seba Baduy celebration held in the Rangkasbitung town square sparked children's curiosity, prompting teachers to explore the cultural theme more deeply to help children connect with their local identity. The teachers recognized the importance of introducing local culture as a means to foster love and a deeper understanding of their cultural heritage, as reflected in one teacher's statement: "I don't want the children to be like me—only now am I learning about

Baduy culture". This approach aligns with educational principles that emphasize the importance of active involvement and contextual knowledge in learning, where teachers are not merely conveyors of information but also learners who continually develop their understanding of local culture [11].

Teachers made efforts to understand Baduy culture by conducting direct observations in Baduy villages and holding meetings with community leaders and the Baduy tribal chief (Jarok). These activities enabled them to gain in-depth knowledge of cultural aspects such as traditional clothing, livelihoods, and artisanal skills. Among the various cultural elements explored, the teachers selected the Leuit (rice barn) as a central teaching material, considering it a key cultural symbol that reflects the unique identity of the Baduy people. Additionally, as the Leuit does not exist in the children's immediate environment, it provided added educational value.

The chosen material was then developed into a teaching module through collaborative discussions among teaching teams. This module was implemented during a one-week learning period. The collaborative planning process supported the implementation of a holistic culture-based learning model, in which teachers work together to develop relevant and contextualized content—an approach aligned with the principles of the Merdeka Curriculum and the Sekolah Penggerak (Driving School) initiative [12].

Recent studies have shown that integrating local culture into the curriculum not only enhances student engagement but also strengthens identity formation and critical thinking skills [13,14]. Thus, the lesson planning process was designed not only to introduce local culture but also to foster children's appreciation and deeper understanding of their cultural heritage, while supporting the development of critical thinking and creativity through a contextual and collaborative approach [15].

B. Implementation of Culture-Based Learning through Center-Based Learning

The implementation of culture-based learning using the Center Learning Model was conducted over four days, with each day offering distinct and integrated learning experiences. On the first day, in the Preparation Center, the teacher presented a video depicting life in the Outer Baduy village. The video served as a visual stimulus to spark children's interest and activate their prior knowledge about local culture.

The teacher facilitated a class discussion by posing open-ended questions—such as comparing traditional clothing styles—which encouraged children to interpret the information they observed [11]. Preliminary activities, such as a rhythmic chant called "Tepuk Suku Baduy", were also used to establish cultural context and enhance children's engagement in the learning process.



Fig 1. Children watching a video of Baduy village life (a); children retelling the content (b)

On the second day, in the Art Center, the teacher introduced a miniature Leuit (traditional rice barn) as a concrete learning medium to deepen children's understanding of the cultural symbols of the Baduy tribe. Using the miniature as a stimulus, the teacher initiated a question-and-answer session to assess the children's recall and comprehension based on the video they had previously watched. This activity not only enriched the visual learning experience but also encouraged children to analyze and evaluate information through guiding questions such as, "Is this a Baduy house?" and "How many pillars does the Leuit have?" [16]. This approach reflects the application of scaffolding principles, in which the teacher provides structure and support to help children connect visual experiences with more abstract concepts.



Fig 2. Teacher introduces the Baduy Leuit (a); children touching the Leuit (b); children observing the inside of the Leuit (c)

On the third day, at the Design and Build Center, the teacher played a video again to remind the children of the material that had been covered, then engaged them in practical activities such as arranging the word Baduy with loose parts and creating a model of a Baduy village using LEGO and wooden blocks.



Fig 3. Children describing the design of life in the Baduy village

This activity encouraged children to develop creativity and critical thinking, as they not only recalled information but also translated it into tangible works. The process of building a model of the Baduy village provided an opportunity for the children to integrate cultural elements they had learned with their own imagination [17].

On the fourth day, at the Cooking Center, the teacher introduced a typical dish from Lebak, Gengsot, through a live demonstration. The teacher explained the process of making Gengsot, from peeling cassava to steaming it, while asking prompting questions like, “What color is the cassava skin?” and “Why should the cassava be cut into pieces before peeling?” which stimulated the children to think and evaluate information critically.



Fig 4. Teacher explains cassava and cassava skin

The activity of tasting the cooked dish and the question-and-answer interaction at the end of the session was conducted to reinforce the children’s understanding of traditional processes and the cultural values embedded within them. This approach aligns with learning theories that emphasize the importance of direct experience and reflection in building meaningful knowledge [18].

Overall, the learning process implemented through the Sentra model not only introduced elements of local culture but also stimulated the development of the children's critical thinking skills. The teacher plays a key role as a facilitator, providing media, questions, and scaffolding

to help children interpret, analyze, evaluate, and integrate cultural information. This approach is consistent with recommendations in the literature on cultural learning, which highlights the importance of context and hands-on experiences in developing cultural identity as well as cognitive abilities [11,17,18].

C. Assessment Practices for Children's Critical Thinking

In the context of the Merdeka Curriculum, critical thinking—referred to as critical reasoning—is one of the six dimensions of the *Pancasila Student Profile* expected to be developed from the early childhood stage. In the observed classroom, teachers actively stimulated this ability by posing open-ended questions during learning activities in several centers, including the Preparation Center, Art Center, Design and Build Center, and Cooking Center. Questions such as “how?”, “what happened?”, and “where does salt come from?” encouraged children to observe, interpret information, and express their ideas during classroom interactions, creating opportunities for the emergence of critical thinking.

To examine how teacher-guided learning activities facilitated children's critical thinking, classroom interactions were analyzed using Facione's six critical thinking indicators—interpretation, analysis, evaluation, inference, explanation, and self-regulation—as an analytical framework. The findings presented below describe representative manifestations of critical thinking observed during video observations, retelling activities, and teacher-child discussions. These examples illustrate how teacher stimulation elicited different manifestations of critical thinking during the learning process rather than representing individual assessments of the participating children.

1. Interpretation.

During the video observation activity, teacher prompts encouraged children to identify and describe visual information related to Baduy culture. Representative responses included “Baduy tribe,” “black and white clothing,” “Baduy bag,” and “trees to make brown sugar.” These responses were categorized as manifestations of interpretation because they reflected children's ability to identify and describe information presented in the learning materials.

2. Analysis.

Analytical skills emerged when children retold the cultural elements they observed in the video. They mentioned objects such as *trees, wooden houses, and traditional tools*, and raised questions such as “Why is there no electricity?” and “Why must it only be wood?” These questions indicate children's ability to examine differences and relationships among cultural elements. Teacher prompts, such as “Is this a Baduy house?” or “How many poles does the leuit have?”, further stimulated children's analytical thinking. These responses were categorized as manifestations of analysis because children compared cultural elements, identified relationships, and raised questions about causal connections

3. Evaluation.

Children's evaluation skills were stimulated through teacher questioning during learning activities. The teacher asked questions such as "What color is the cassava skin?" and "Why must the cassava be cut before peeling?" These questions encouraged children to consider the accuracy and logic of the information presented in the learning media. Through this process, children attempted to judge and verify the characteristics of the objects they observed, indicating their emerging ability to evaluate information and determine whether their understanding matched the visual evidence presented during the activity. These responses reflected evaluation because children judged the accuracy and appropriateness of information based on the evidence presented during the activity.

4. Inference.

Children demonstrated inference skills when they connected information from the video with their own experiences. For example, one child shared, *"I went to Baduy with dad, mom, and my brother,"* while describing elements seen in the video. By linking their personal experiences with the cultural elements presented in the learning materials, children attempted to draw conclusions about the characteristics of the Baduy community. These responses were categorized as manifestations of inference because they reflected children's ability to connect prior knowledge with newly acquired information to construct meaning.

5. Explanation.

The explanation indicator was observed during retelling and presentation activities, in which children described what they had learned about Baduy culture. Children not only repeated factual information but also attempted to explain their understanding in a coherent manner. For instance, they described the wooden houses, traditional tools, and environmental conditions, while also expressing their impressions, such as saying that the place was *"fun"* and *"cold."* These responses were categorized as manifestations of explanation because they reflected children's ability to organize and communicate their understanding of cultural phenomena in a coherent manner.

6. Self-Regulation.

Self-regulation was reflected in children's efforts to reconsider and refine their understanding during the learning process. Some children asked questions related to the cultural practices they observed, such as asking why the Baduy people do not use sandals. These questions suggest that children sought clarification about unfamiliar cultural practices. When the teacher posed follow-up questions, such as *"Where does salt come from?"*, children attempted to reconsider their responses and adjust their explanations. This process shows the emergence of self-regulation as children reflected on and improved their thinking. These

responses reflected self-regulation because children reconsidered their initial understanding after receiving teacher prompts and sought clarification about unfamiliar cultural practices.

The findings of this study indicate that the integration of open-ended questions and storytelling activities within culture-based learning effectively facilitated the emergence of children's critical thinking during classroom interactions while supporting contextual and meaningful learning experiences. Teacher questioning plays an important role in guiding children to observe, interpret information, and respond to cultural content presented during learning activities. As highlighted in previous studies, the ability of teachers to ask meaningful questions is a fundamental competence for developing students' thinking skills [19]. The analysis of classroom interactions showed that opportunities for the emergence of critical thinking differed across Facione's six indicators, depending on the nature of the teacher-guided learning activities. Manifestations of interpretation and analysis were more readily observed during the learning activities, particularly when children observed visual media, identified cultural objects, and responded to the teacher's questions. These activities encouraged children to recognize information, describe cultural elements, and examine differences between their daily experiences and the cultural practices presented in the learning materials.

Opportunities for the emergence of evaluation were observed when children responded to reflective questions posed by the teacher, such as identifying characteristics of cultural objects or explaining simple processes presented during the activity. In this case, children were able to consider information and provide responses, although the process was still largely guided by teacher questioning. In contrast, opportunities for the emergence of inference, explanation, and self-regulation were observed less frequently during the documented classroom interactions. Although some children demonstrated attempts to draw conclusions from the information presented, opportunities for developing deeper explanations or revising their understanding through self-reflection were less evident and generally required additional teacher guidance and follow-up questioning. This finding suggests that the emergence of critical thinking manifestations across Facione's six indicators was influenced by the nature of the teacher-guided learning activities and the level of instructional scaffolding provided during classroom interactions.

The differences in the level of stimulation among these indicators can be understood in relation to both the nature of the learning activities and the developmental characteristics of early childhood. Young children tend to demonstrate observable thinking behaviors such as identifying objects, describing information, and asking questions before developing more complex cognitive processes such as drawing inferences, organizing explanations, and reflecting on their own thinking. Therefore, higher-level indicators such as inference and self-

regulation require stronger instructional scaffolding and more structured opportunities for reflection during learning activities.

These findings highlight the need for additional pedagogical strategies to create more opportunities for the emergence of children's critical thinking during classroom interactions. Strategies such as deeper open-ended questioning, guided discussions, and systematic feedback may help support the emergence of inference, explanation, and self-regulation during learning activities. One study found that two indicators can be used to measure young children's critical thinking both qualitatively and quantitatively: spontaneity and sustained questioning. Sustained questioning refers to follow-up questions that demonstrate children's persistence in seeking information and reflect critical thinking traits such as persistence in seeking relevant information and focus during investigation [20].

Therefore, feedback that stimulates children's curiosity and encourages them to ask further questions is essential for strengthening their thinking processes. With more structured instructional support and varied stimulation strategies, local culture-based learning may provide richer opportunities for the emergence of children's critical thinking across a wider range of classroom interactions.

In practice, teachers assessed children's critical thinking through daily evaluations using a checklist system. The teacher recorded children's ability to retell the learning material and observed children's curiosity as reflected in the questions they asked during learning activities. As noted by the school principal, "The retelling activity was included in the daily assessment, particularly in observing children's curiosity during storytelling." This indicates that retelling activities function not only as indicators of basic literacy achievement but also as opportunities to observe children's emerging critical thinking behaviors.

However, the checklist-based assessment used in daily evaluations mainly focuses on the achievement of basic learning objectives and does not explicitly measure the full range of critical thinking dimensions according to Facione's framework. As a result, deeper indicators such as inference, explanation, and self-regulation consistently documented through this assessment approach. This limitation suggests the need for more comprehensive assessment tools that can better document the emergence of children's critical thinking across different learning activities in early childhood learning contexts.

This study also contributes to the existing literature by demonstrating how the integration of local culture within a center-based learning model can serve as an effective context for stimulating early childhood critical thinking. While previous studies have discussed critical thinking development in early childhood or the use of culture-based learning separately, this study provides empirical evidence that combining these approaches can create meaningful learning experiences that simultaneously strengthen children's cognitive development and

cultural awareness. In particular, the use of Lebak cultural elements—such as traditional houses, clothing, and local practices—as learning resources enables children to engage with culturally relevant content while practicing observation, questioning, and reasoning. Thus, this study highlights the potential of local culture-based learning as a pedagogical strategy that not only preserves cultural values but also creates meaningful opportunities for the emergence of critical thinking during classroom interactions in early childhood.

Conclusion

This study demonstrates that the introduction of Lebak culture through a center-based learning model provides meaningful opportunities for the emergence of children's critical thinking during teacher-guided classroom interactions. The learning process is implemented through three main stages: planning, implementation, and assessment. In the planning stage, teachers collaboratively design contextual teaching modules that integrate local cultural elements based on children's interests and experiences. During implementation, various learning centers provide opportunities for children to explore Lebak culture through visual media, real objects, creative activities, and interactive discussions.

created opportunities for the emergence of manifestations of critical thinking corresponding to Peter A. Facione's six indicators— interpretation, analysis, evaluation, inference, explanation, and self-regulation — during teacher-guided classroom interactions. Through observation, discussion, and storytelling activities, children demonstrate manifestations of interpreting cultural information, analyzing cultural elements, drawing conclusions, explaining their understanding, and reflecting on their thinking during classroom interactions.

However, the current assessment approach, which relies on a checklist system, does not fully capture all dimensions of critical thinking, particularly inference, explanation, and self-regulation. Therefore, future learning practices should incorporate more comprehensive assessment tools, such as holistic rubrics, to better document the emergence of children's critical thinking during learning activities. In addition, strengthening teachers' knowledge of local culture and expanding the availability of contextual learning media may further enhance the effectiveness of culture-based learning in early childhood education.

Limitation and Suggestions

This study contributes to the development of early childhood education by demonstrating how the integration of local culture within a center-based learning model can facilitate the emergence of children's critical thinking during teacher-guided classroom interactions. The findings provide insights into how teachers introduce Lebak culture through various learning activities, such as storytelling, discussions, the use of real objects, and video-

based media. These strategies create contextual learning experiences that encourage children to actively explore cultural knowledge while developing their thinking skills. The study also highlights the role of teachers as facilitators who stimulate children's reasoning through open-ended questioning and interactive learning activities.

Nevertheless, this study has several limitations. First, the research was conducted in a single classroom with a limited number of participants, which may restrict the generalizability of the findings. Second, the assessment relied on classroom observations and checklist-based evaluation, which may not fully document the emergence of critical thinking manifestations, particularly those related to inference, explanation, and self-regulation, during classroom interactions.

Future research could further examine how culture-based learning strategies facilitate the emergence of children's critical thinking during classroom interactions by using more comprehensive observation and assessment tools. Longitudinal studies may also explore how sustained integration of local culture within early childhood curricula contributes to children's cognitive development and cultural identity. In addition, further studies may investigate how teacher professional development in local culture knowledge and questioning strategies can enhance the quality of critical thinking stimulation in early childhood learning environments.

This study contributes to improving the quality of early childhood education, especially in the Lebak area, by providing an overview of the strategies used by PAUD teachers in introducing local culture to children. The results of the study show that teachers use various methods such as questions and answers, storytelling, displaying real objects, and utilizing video media. Thus, this study can be the basis for developing more effective and contextual learning strategies, and assist teachers in choosing the most appropriate method to introduce culture to children from an early age. In addition, this study also highlights the importance of teacher-guided questioning, storytelling, real objects, and contextual learning media in creating meaningful learning experiences that facilitate the emergence of children's critical thinking during local culture-based learning.

However, this study has several limitations. One of them is that it did not examine the relative contribution of each teacher-guided learning strategy to the emergence of children's critical thinking during classroom interactions. In addition, this qualitative study did not evaluate children's critical thinking as individual learning outcomes or compare the effectiveness of different instructional strategies. Another limitation is that the study did not explore in depth how teachers can further strengthen their questioning techniques and instructional scaffolding to facilitate children's critical thinking during local culture-based learning.

Based on these limitations, future research could examine how different teacher-guided learning strategies facilitate the emergence of children's critical thinking during local culture-based learning by employing more comprehensive observation and assessment tools. Longitudinal studies can also be conducted to explore the impact of professional development in local culture knowledge, questioning strategies, and instructional scaffolding and improving questioning skills that encourage children to think more deeply. In addition, further research can investigate how strengthening a local culture-based curriculum can provide richer opportunities for meaningful learning and critical thinking so that local culture is not only introduced sporadically but becomes an integral part of the learning process in PAUD.

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Conflict of Interest

The authors declare that there is no conflict of interest.

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