

# Integrating Gayo Tradition: *Alang Tulung* in Blended Project-Based Learning

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## ABSTRACT

In the context of globalization, traditional cultural values are increasingly at risk of being overlooked in modern education. The *Alang Tulung* tradition of the Gayo people in Aceh, which promotes *gotong royong* (mutual cooperation), social responsibility, and collaboration, offers meaningful values for character development in youth. This study investigates the integration of *Alang Tulung* into a Blended Project-Based Learning (BPjBL) model. A qualitative approach was employed, utilizing semi-structured interviews, classroom observations, learning outcome evaluations, and student surveys. The study aimed to assess both the cultural significance and educational effectiveness of the *Alang Tulung*-based BPjBL model. The findings indicate that incorporating *Alang Tulung* values into BPjBL enriched students' learning experiences and supported cultural preservation. Academic performance improved significantly, with an N-Gain score of 0.72. Collaboration skills also increased, with an average score of 4.6 and 92% of students displaying optimal teamwork. Additionally, 90% of participants reported a deeper understanding of the *Alang Tulung* tradition, and 88% recognized its relevance to contemporary education. While the model proved effective, challenges such as limited internet connectivity and the absence of structured cultural learning modules were noted. These barriers suggest the need for infrastructure improvements and curriculum development. The integration of local cultural traditions like *Alang Tulung* into educational models can enhance student engagement, foster character development, and contribute to cultural preservation amidst globalization.

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## 1. INTRODUCTION

Local culture plays a very important role in shaping the identity of a society, providing a deep understanding of human values and social norms that have been passed down from generation to generation (Deliana et al., 2024). One example of a very rich local culture is the *Alang Tulung* tradition originating from the Gayo people in Aceh. This tradition focuses on the spirit of *gotong-royong*, mutual assistance, and social responsibility implemented through various activities such as *Mango Lo*, *Mah Atur*, *Bejamu*, *Berumpah-umpah*, *Tung Upah*, and *Berlat/Berhelat* (Rosdaniah & Hilliyani, 2024). The values contained in the *Alang Tulung* tradition not only strengthen societies, but also shape the character of people who support each other in living their daily lives (Lubis, 2018).

The importance of integrating local wisdom into the education curriculum lies in its potential to preserve cultural values and local identity, while enriching students' learning experiences. However, key challenges in its implementation include the lack of clear operational guidelines, limited educational resources, and teachers' lack of understanding of relevant local values (Suciati, 2023). Other research also notes that although culture-based learning models have a positive impact on students' understanding of local identity, their implementation is often hindered by a lack of policy and technological support (Chaeruman & Maudiarti, 2018; H. Kurniawan et al., 2024).

However, technological advances and globalization pose a challenge in maintaining and passing on these traditional practices, especially to younger generations, and can make the process particularly difficult (De Bruijn-Smolanders & Prinsen, 2024; Hashemi & Na, 2020). One of the ways to sustain this tradition is by education (Lestari, 2022). The increasingly widespread use of the Project-Based Learning (PjBL) model provides a great opportunity to introduce the values of *Alang Tulung* in a more contemporary manner, especially by adopting the Blended Project-Based Learning (BPjBL) model of teaching and study in general (Yustina et al., 2020).

The BPjBL model contains the principles of project-based learning to develop collaborative and problem-solving skills, using digital technology (Diasuti et al., 2024; Mursid et al., 2022). The implementation of the BPjBL model in accordance with local cultural values allows students to grasp learning outcome beyond the theoretical knowledge. They will also directly see the nature of *Alang Tulung*, the spirit of collective cooperation in the Gayo tribe, like helping each other in completing work or participating in other communal activities.

Even if this can be a partial solution, to preserve the spirituality values contained in the Gayo cultural traditions in the era of modernization is certainly not an easy task (Darmawan & Radiansyah, 2023). Urbanisation, and a new period of relative globalization and innovation in integrating technology into daily life have become a challenge for the Gayo people, who are swimming in what I shall tentatively term, the language of ancestral knowledge. Younger generations, who are, by now, more connected with technology and modern lifestyles while these changes continue to set roots, do not know of or appreciate this *Alang Tulung* tradition. Such distance threatens to undermine the social values that have historically become the linchpin of relationships in the Gayo people.

In Indonesia, including Gayo, the education system also struggles to adapt both local culture and education in the modern era. There are numerous research studies on the application of project based learning (PjBL) models to enhance collaborative skills and problem-solving (Almulla, 2020), there has been no research linking the application of local cultural values in BPjBL. However, although PjBL and BPjBL have been shown to improve students' skills, this phenomenon gap indicates that the overall authenticity of learning can not only be removed from local elements such as *Alang Tulung*, because there is an opportunity to increase the relevance of learning.

In past research, many studies have emphasised the importance of technology in supporting project-based learning and blended learning models (Idris, 2011), however, few have covered how local culture can enrich these learning experiences. This suggests a gap in the literature that needs to be bridged by incorporating local cultural values into modern learning models, especially in tradition-rich areas such as Gayo.

This knowledge gap reveals eight significant missing elements among prior studies in integrating cultural nuances and embodiments thereof and bridging traditional and modern pedagogies. One of the major gaps is the absence of culturally contextualized models of learning. Indeed, although many studies have discussed PjBL along with problem-based learning that refers to the implementation of 21st-century-skills, eg. critical thinking and creativity (H. Kurniawan et al., 2024; W. Kurniawan & Hidayati, 2019; Yew & Goh, 2016), very few of them integrated local cultural harvest, e.g. *Alang Tulung*, and many studies highlight overall learning outcomes and the possibility of what local traditions can add to the knowledge learned. The other emerging gap is the local wisdom phenomenon. While some research has examined the inclusion of culture within the curriculum (Muin & Utami, 2024), few studies have connected the practice of culture, such as *Alang Tulung*, with project-based or blended learning model. Furthermore, although blended learning incorporates both the online and in-person environment, which are the two main methods of teaching, there are still limited studies on how culture is integrated with blended learning especially in communities where traditional practices are retained. Though blended learning methodologies have been effectively developed in areas including biology and information technology (Tahir et al., 2022), how they can be used to support cultural traditions is relatively unstudied.

The integration of the values of the *Alang Tulung* tradition into the blended PjBL model is new and unique. The goal of the model is to safeguard cultural significance by allowing the students to gain academic knowledge and provide an understanding of their heritage. This can be done through local wisdom which can be integrated with 21st-century learning, so that it can provide a solution for the lack of studies related to the abundance of local wisdom that can facilitate the creation of a rich, culture-based project-based learning model. Such an approach could also serve as a bridge to closing educational gaps, preserve Gayo cultural values for future generations, and a real antidote to cultural erosion (Chibiko Offorma, 2016). In addition to helping educators to create such learning environments and to implement innovative pedagogical strategies (Chaeruman & Maudiarti, 2018; Lestari, 2022), the construction of traditional wisdom, as a form of indigenous knowledge, can still serves to be integrated into modern pedagogy.

The purpose of this study is to explore a deeper understanding of the values contained in the *Alang Tulung* Gayo tradition, analyze the values integrated into the Blended Project-Based Learning (BPjBL) learning model, evaluate the effectiveness of the *Alang Tulung* Gayo-based Blended Project-Based Learning (BPjBL) model, and evaluate the challenges and opportunities that may be faced in integrating the *Alang Tulung* tradition into modern education. In addition, this study aims to provide recommendations that can be used by educators and policymakers in designing more inclusive and culturally-based learning models. It is hoped that the results of this study can contribute to curriculum development that is more relevant to the local context in Gayo and other regions, thus enabling learning that respects cultural heritage while facing the challenges of globalization in education.

## 2. METHODS

This research uses a qualitative approach with phenomenological methods, which aims to understand the experiences and perceptions of individuals related to the meaning of the *Alang Tulung* tradition and its application in learning. The phenomenological approach allows the researcher to explore the subjective perceptions of respondents and understand the meaning they give to the concept and practice of *Alang Tulung* in everyday life and in the context of education. Phenomenology refers to the way a person sees things (Littlejohn & Foss, 2008). People believe that knowledge comes from conscious experience. Phenomenology, in this context, means letting things appear as they are. On the one hand, it allows the disclosure of facts, phenomena, and experiences to have meaning. Rather, meaning comes from the interaction between subjects and the phenomena they encounter. Phenomenological research methods use people's thoughts and behaviour to understand events in

human life. Ontological problems can be answered through phenomenological research. Phenomenological studies aim to increase our understanding of reality (Nasir et al., 2023).

This study used a purposive sampling approach to select respondents who have a deep understanding of the Alang Tulung tradition and the relevance of local culture in education, with two main criteria: Gayo Customary Figures (customary leaders, elders, or members of customary institutions) who understand the philosophy and practice of culture, and Gayo Cultural Practitioners (teachers, cultural activists, or community leaders) who are involved in the preservation and application of Alang Tulung values in learning. The sampling procedure began with initial identification through recommendations from the Gayo community, followed by a formal approach to obtain informed consent, and verification of credibility based on practical experience. The number of respondents was determined by the principle of data saturation, namely 4 people (2 customary leaders and 2 cultural practitioners) which were considered sufficient to produce in-depth information without duplication. Interviews were conducted in a semi-structured manner with a guide containing five main themes: (1) the meaning of the value of mutual cooperation in Alang Tulung, (2) cultural practices such as Mango Lo and Berlat/Berhelat, (3) the potential of Blended Project-Based Learning (BPjBL) as a medium for cultural preservation, (4) the challenges of globalization and opportunities for technology, and (5) the application of the *Bejamu* or *Tung Upah* concept in mathematics learning. Each session lasted 60–90 minutes, was recorded with the respondents' permission, and was transcribed verbatim for further analysis.

The subjects of this study were two main groups of respondents: (1) Gayo traditional leaders: These are individuals who have a deep understanding of the *Alang Tulung* tradition, as well as its role in Gayo society. Traditional leaders will provide insights into the values contained in *Alang Tulung* and how this tradition is applied in everyday life, and (2) Gayo Cultural Practitioners: These cultural practitioners could include teachers, cultural activists, or community leaders involved in the preservation and development of local culture. They will provide perspectives on how the *Alang Tulung* tradition can be applied in project-based learning.

Data will be collected through in-depth interviews with traditional leaders and cultural practitioners. These interviews are designed to explore their views and experiences of *Alang Tulung's* values and the ways in which they can be integrated into BPjBL learning. The interviews will be semi-structured, with some key questions prepared, allowing respondents to speak more freely and provide additional relevant input. In addition to interviews, observations of cultural activities associated with *Alang Tulung* will also be made to provide a more in-depth context of the application of this tradition in the daily lives of the Gayo people. Data was also collected through student learning outcomes, collaboration skills, understanding of cultural values, technology effectiveness, and challenges.

The main instrument in this study was a semi-structured interview guide that focused on the following topics: (1) The meaning and essence of *Alang Tulung* values in the lives of Gayo people, (2) Traditional practices that reflect *Alang Tulung* values, (3) Views on the application of these values in education, particularly in the BPjBL model and (4) Challenges and opportunities faced in integrating these traditions in modern learning, (5) the meaning of *Mango Lo*, *Mah Atur*, *Bejamu*, *Berumpah-umpah*, *Tung Upah*, and *Berlat/Berhelat* as *Alang Tulung* Gayo values, (6) the application of *Alang Tulung* Gayo values in blended project-based learning in mathematics learning using *Mango Lo*, *Mah Atur*, *Bejamu*, *Berumpah-umpah*, *Tung Upah*, and *Berlat/Berhelat*. The collected data will be analysed, with the first step being the transcription of all interviews and observation notes. Next, the data will be categorised into the main themes that emerge, for example, related to gotong-royong, social responsibility, and application in learning. Once the main themes have been identified, the researcher will examine the connections between the cultural values discovered and the concept of project-based learning, with a particular focus on Blended Project-Based Learning (BPjBL). The analysis is organized according to the model developed by Miles et al. (2014). It includes data collection, data reduction, data presentation, and drawing conclusions. This methodology will provide a comprehensive view of the *Alang Tulung* tradition that can be later on incorporated into modern learning systems. The collected data are

expected to assist in the process of the identification and rectification of the challenges faced by the education department in the Gayo region and the utilization of the local cultural wisdom in the contemporary education system. The analysis process is also carried out quantitatively obtained from learning outcomes, survey results and observation results, this is done to evaluate the effectiveness of the BPjbl model based on Alang Tulung Gayo.

### 3. FINDINGS AND DISCUSSION

This research aims to deeply examine the educational and social values contained in the Alang Tulung Gayo tradition through an exploration of six key cultural practices, namely *Mango Lo*, *Mah Atur*, *Bejamu*, *Berumpah-umpah*, *Tung Upah*, and *Berlat/Berhelat*. Each practice reflects values of mutual cooperation, collective responsibility, empathy, respect for contributions, and community solidarity-values that are highly relevant to 21st-century learning that emphasizes collaboration, character, and social engagement.

To gain an authentic understanding, the research involved in-depth interviews with Gayo traditional leaders and cultural practitioners. From the interviews, it was found that while the Alang Tulung tradition still holds significance in the lives of the community, the younger generation's engagement with these values is weakening due to the influence of globalization and lifestyle changes. This is exacerbated by the lack of space in the formal curriculum that can accommodate local cultural values in a contextual and meaningful way.

Interviews conducted during the research also uncovered strategic opportunities for integrating Alang Tulung values into modern learning approaches, particularly through Blended Project-Based Learning (BPjBL). This model is seen as effective because it combines face-to-face instruction, online learning, and real-world, community-based projects. These elements provide students with the opportunity to apply traditional values in practical contexts. For example, simulation projects involving *gotong royong* (mutual cooperation), task distribution based on students' individual strengths, and the digital documentation of cultural traditions allow students not only to gain knowledge but also to develop emotional and social skills.

One traditional leader interviewed explained that Alang Tulung is more than just cooperative work—it reflects a deeper philosophy of life rooted in social responsibility and unity. He shared examples of how these values are embodied in community activities, such as the collective building of traditional houses, where everyone contributes regardless of social status, and large-scale ceremonies like *Kenduri Blang*, which demonstrate organized cooperation. According to him, integrating these cultural practices into education is essential to preserving students' connection to their cultural roots and strengthening their social identity.

A cultural practitioner added that Alang Tulung also represents harmony between people and nature and can serve as a powerful character education tool. She stressed the importance of teaching values like selflessness and communal care through traditional practices such as *Bejamu* and *Mah Atur*, which instill a sense of empathy and resilience from an early age. In today's educational context, she advocated for the use of technology to document and preserve these practices, making them accessible to future generations and ensuring the continuity of local wisdom in a digital age.

Both agreed that the BPjBL model could be an appropriate medium to transform the values of Alang Tulung into contemporary education. Indigenous leaders highlighted the importance of collaboration within the project as a means of instilling the values of shared responsibility and solidarity, while cultural practitioners emphasized the opportunity to synergize technology and local culture, through documentation of cultural practices in the form of videos, blogs, or other interactive media. Furthermore, both speakers explained the meaning and function of the six main elements in Alang Tulung: *Mango Lo* as a symbol of initial commitment; *Mah Atur* as an efficient strategy for division of labor; *Bejamu* as a strengthening of social care; *Berumpah-umpah* as a reflection of community unity; *Tung Upah* as a form of appreciation; and *Berlat/Berhelat* as a celebration of

collective achievement. These values have the potential to be translated into a project-based math learning design.

In the context of BPjBL for Mathematics, these values are applied concretely and systematically. *Mango Lo* is represented in the form of initial ideas for student projects; *Mah Atur* in the division of roles according to competencies; *Bejamu* in collaboration to solve contextual problems; *Berumpah-umpah* in working on large projects such as budget simulations or data mapping; *Tung Upah* through appreciation of student work; and *Berlat/Berhelat* through joint presentations and reflections. Thus, mathematics learning does not only focus on cognitive aspects, but also strengthens character and reintroduces local cultural heritage that is starting to be eroded by the times.

Gayo traditional leaders and cultural practitioners agree that *Alang Tulung* is not only a tradition, but also a philosophy of life rich with values of mutual cooperation, empathy, solidarity, and social responsibility (Utomo, 2018). These values remain relevant despite the challenges of globalisation and modernisation (Quraysyi et al., 2024). Traditional practices such as co-operation in customs, agriculture and daily life strengthen solidarity and mutual trust in society (Nur et al., 2023). The utility of these values in training, in particular within the Blended Project-Based Learning (BPjBL) model, is expected to enrich the know-how of neighborhood lifestyle whilst growing 21st century capabilities, such as collaboration and creativity (Fahlevi, 2022). While there are demanding situations in incorporating the *Alang Tulung* way of life into education consisting of gaps in expertise amongst younger generations and boundaries within the curriculum the usage of era in current education offers promising opportunities. Technology serves as a bridge to each maintain nearby culture and equip the younger era to navigate worldwide challenges. By integrating *Alang Tulung* values into arithmetic training through the Blended Project-Based Learning (BPjBL) model, we will increase academic content material at the same time as concurrently fostering person improvement in students. This technique promotes cooperation, values effort, and celebrates fulfillment, all of which align with the core concepts of the *Alang Tulung* subculture (Purwadhi, 2019; Yunanto & Kasanova, 2023).

Cultural integration into education, in the perspective of sociology and anthropology, is not only to transfer local cultural values, but also to build social identity, preserve traditions, and create a learning system that is relevant to the community context. Through functionalism theory, education is seen as a means of cultural socialization to strengthen social cohesion (Djibran, 2017). Conflict theory highlights that globalization can threaten local culture, but local culture-based education can be a way to maintain that cultural identity, as expressed by Suradi (2018), who points out that project-based education with a focus on local culture can be a means of resistance to global cultural homogenization. Educational anthropology views education as a process of inculturation, where culture is transmitted between generations (Chotimah et al., 2018). This approach, such as Blended Project-Based Learning (BPjBL), can enrich students' learning experiences, strengthen their attachment to the community, and prepare them for global challenges. Technology also acts as a mediator that enables the spread of local traditions to all corners of the world, such as through documentation and digital learning, as expressed by Rahmah (2024). Cultural integration in education is crucial to maintaining diversity and developing intercultural respect (Mo'tasim et al., 2022).

Not only looking at the results of interviews and observations, but it is also necessary to look at quantitative data to evaluate the effectiveness of Blended Project-Based Learning (BPjBL) based on *Alang Tulung*. Quantitative data, such as test results, surveys, and skills assessments, can provide an objective picture of student achievement in academic, social, and 21st century skills. By combining these two types of data, the evaluation can provide a more comprehensive insight into the impact of local culture-based BPjBL on students' character and skills formation in the context of relevant and sustainable education. The following are the results of the evaluation of the effectiveness of BPjBL based on *Alng Tulung Gayo*.

**Table 1.** Results of Evaluation of the Effectiveness of BPjBL Based on Alang Tulung Gayo

Evaluation Aspect	Indicator	Quantitative Result	Category
Learning Outcomes	Pretest Average	60,3	Medium
	Posttest Average	85,1	Good
	N-Gain Score	0,72	High
Collaboration Skills	Average score (scale 1-5)	4,6	Very good
	Collaboration skills	92%	Very good
Understanding of local cultural values	Students understand the tradition of Alang Tulung Gayo	90%	Very good
	Students feel the tradition is relevant in modern education	88%	Good
Technology Effectiveness	Student participation in the LMS	87%	Good
	Completion of culture-based online assignments	81%	Good
	Student satisfaction with technology-based learning (Scale 1-5)	4,3	Good
Challenges	Students with internet access problems	25%	High
	Students need more explanation regarding cultural traditions	15%	Medium

The analysis presented in Table 1 highlights the effectiveness of the Alang Tulung-based Blended Project-Based Learning (BPjBL) model across multiple domains. Academically, students showed significant improvement in their understanding of mathematical concepts—particularly integrals—with an N-Gain score of 0.72, placing it in the high-effectiveness category. This demonstrates the strong impact of culturally contextualized learning on academic achievement. In terms of collaboration, students exhibited advanced teamwork skills, with an average score of 4.6 (classified as excellent), and 92% of them demonstrated optimal collaboration. These results reflect the relevance of traditional Gayo values of mutual cooperation, such as those found in *Mango Lo* and *Mah Atur*, in enhancing collaborative learning experiences.

Cultural understanding also improved, with 90% of students reporting a deeper comprehension of the Alang Tulung tradition, and 88% recognizing the relevance of its values within modern educational contexts. This indicates that the integration of local cultural heritage into the learning process successfully increased students' cultural awareness. Regarding the use of technology, student engagement was high, with 87% actively participating in the Learning Management System (LMS) and 81% completing online assignments. However, infrastructure issues persisted, as 25% of students reported internet access challenges. Additionally, 15% of students required further guidance in understanding Alang Tulung traditions, suggesting the need for supplementary instructional materials.

Overall, the quantitative results confirm that the Alang Tulung-based BPjBL model effectively enhances academic performance, social skills, and cultural literacy. Nonetheless, future implementations should address technological barriers and expand curriculum resources to ensure broader accessibility and deeper cultural integration.

Integrating Blended Project-Based Learning (BPjBL) within a local cultural context significantly enhances how students engage with both academic material and their surrounding community. By customizing projects to reflect local values, traditions, and social issues, learning becomes more relevant, meaningful, and rooted in students' lived experiences. For instance, in Minangkabau culture—where the principle *adat basandi syarak, syarak basandi kitabullah* (custom based on Islamic law, Islamic law based on the Qur'an) guides social life—BPjBL can be designed around religious and cultural preservation. Projects might involve efforts to maintain traditional structures like *rumah gadang* or organize cultural ceremonies, reinforcing the importance of religious harmony and communal

responsibility. In Dayak communities, which emphasize ecological stewardship through indigenous knowledge, BPjBL could focus on biodiversity conservation or forest preservation, integrating students directly into community-driven environmental projects.

These culturally grounded implementations of BPjBL align with findings from studies by Alsaif (2021), Eden et al. (2024), and Sari et al. (2020), which demonstrate that such approaches enrich the educational experience. By embedding local identity into the curriculum, students not only develop stronger social, communication, and leadership skills but also cultivate cultural pride and a sense of belonging. Beyond academic gains, this method prepares learners for global citizenship by nurturing universally relevant competencies such as collaboration, problem-solving, and social responsibility—all framed within culturally meaningful contexts.

To address challenges associated with implementing local culture-based BPjBL, several practical strategies can be adopted by educators and institutions. Integrating local cultural values into the curriculum through community-focused projects is a foundational step—this might include activities that promote *gotong royong* (mutual cooperation) and environmental awareness. Professional development for educators is equally important; training sessions that involve cultural practitioners or traditional leaders can deepen teachers' understanding and sensitivity to local contexts (Mansir & Wadham, 2021).

Building strong partnerships with local communities further strengthens the implementation process. Inviting traditional leaders, artists, or craftspeople to participate in student projects creates more authentic and engaging learning experiences (Bublitz et al., 2019). Technology also plays a key role; digital platforms can be used to document and disseminate cultural knowledge, increasing accessibility and supporting cultural preservation efforts (Haleem et al., 2022).

Furthermore, aligning culturally responsive projects with national curriculum standards ensures that learning outcomes remain academically rigorous while fostering cultural awareness. Teaching students to appreciate local culture within a global framework prepares them for broader societal participation (Chibiko Offorma, 2016). Continuous monitoring and evaluation are essential to measure the effectiveness of these initiatives and make necessary adjustments. Finally, the provision of adequate resources—including teaching materials and technological infrastructure—is critical to sustaining the successful implementation of BPjBL. Through these comprehensive strategies, the challenges of incorporating local culture into blended project-based learning can be effectively addressed, resulting in more inclusive, relevant, and impactful educational experiences (Suyantiningih et al., 2023).

#### 4. CONCLUSION

This research shows that integrating the traditional values of *Alang Tulung Gayo* into education through the Blended Project-Based Learning (BPjBL) model has a positive impact on students' academic performance, social skills, and cultural understanding. Practices such as *Mango Lo*, *Mah Atur*, *Bejamu*, and others, which promote values like *gotong royong* (mutual cooperation), empathy, and solidarity, enrich the learning experience by supporting character development and 21st-century skills.

The study found that students' academic outcomes improved significantly, as shown by an N-Gain score of 0.72. Collaboration skills also developed well, with an average score of 4.6, and 92% of students demonstrated strong teamwork. Furthermore, 90% of students gained a better understanding of the *Alang Tulung* tradition, and 88% felt that these cultural values are still relevant in today's education.

However, the research also faced several limitations. These include a lack of awareness about the importance of local culture in education, the constraints of modern curriculum structures, and limited internet access in some areas. These challenges affect the full implementation of culture-based BPjBL, especially in remote or under-resourced regions.

For future research, it is suggested that interdisciplinary approaches—combining sociology, anthropology, and education—be explored to better understand how local cultural values influence student character and social skills. Further studies should also examine how culture-based BPjBL affects

creativity, critical thinking, and collaboration across different contexts. Research into how technology can help preserve and share cultural knowledge, especially in remote areas, will also be valuable. Lastly, the development of inclusive curriculum models that combine global knowledge with local wisdom will ensure that education remains both modern and culturally rooted, helping students become responsible, collaborative, and culturally aware global citizens.

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