



Authentic Assessment of Literacy and Numeracy Based on Local Wisdom at Elementary School Level in Ternate City

Ode Zulaeha¹, Harina Sangadji¹

¹Elementary School Teacher Education, Institut Sains dan Kependidikan Kie Raha Maluku Utara, Maluku Utara, Indonesia

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ABSTRACT

Purpose of the study: This study aims to describe the implementation of authentic assessment of literacy and numeracy based on local wisdom in elementary schools in Ternate City.

Methodology: A mixed methods approach was employed involving both qualitative and quantitative data collection. The participants were 200 fifth-grade students from four schools Elementary School 1, Elementary School 2, Islamic Elementary School Nurul Hasan, and Islamic Elementary School Fathul Munir selected proportionally. Data were gathered through classroom observations, documentation, and authentic tasks integrated with local cultural contexts. Qualitative data were analyzed thematically, while descriptive statistics were used for quantitative analysis.

Main Findings: The findings reveal that authentic assessment based on local wisdom in Ternate has not yet been systematically implemented in literacy and numeracy learning. However, several innovative teacher practices emerged, such as using the Ternate language for numeracy tasks, conducting literacy activities through interviews with market vendors, and applying mathematical concepts in real-life contexts like market transactions. These practices effectively connected students' cultural experiences with learning objectives, enhancing engagement and conceptual understanding.

Novelty/Originality of this study: The novelty of this study lies in integrating Ternate's local wisdom as a contextual foundation for authentic literacy and numeracy assessment, bridging the gap between assessment theory and culturally grounded educational practice. The study contributes to the development of context-sensitive assessment instruments that promote equity, relevance, and cultural identity in education. Furthermore, it provides empirical evidence supporting culturally responsive pedagogy as a strategy for improving learning outcomes in diverse local contexts.

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Corresponding Author:

Ode Zulaeha,
Elementary School Teacher Education, Institut Sains dan Kependidikan Kie Raha Maluku Utara, Maluku Utara, 97747, Indonesia
Email: odezulaeha@isdikkiekieraha.ac.id

1. INTRODUCTION

Basic education plays a crucial role as the foundation for developing students' literacy and numeracy competencies, which are essential for lifelong learning [1]-[5]. In regions such as Ternate City known for its rich cultural heritage, traditions, and local wisdom education has the unique potential to integrate cultural values into the learning and assessment process. However, current assessment practices in many Indonesian schools, including those in Ternate, tend to focus primarily on general cognitive aspects without considering students' cultural and environmental contexts. This disconnection often results in a lack of contextual relevance and

student engagement in learning activities [6]-[9]. According to the Ministry of Education and Culture, there is an increasing need to design assessment systems that not only measure academic achievement but also align with students' real-life experiences and local culture.

Local wisdom encompasses the traditions, languages, social practices, and indigenous knowledge of the community, all of which play a vital role in shaping students' identity and character [10]-[14]. Integrating these elements into literacy and numeracy assessments allows learners to connect their academic skills with their cultural environment. Such integration promotes not only mastery of basic competencies but also the development of appreciation and pride in one's cultural heritage. Authentic assessment, in this regard, offers a holistic approach that evaluates students' cognitive, affective, and psychomotor abilities in realistic contexts. It emphasizes performance-based tasks that mirror everyday experiences, enabling students to demonstrate literacy and numeracy competencies in culturally relevant situations [15]-[17].

The urgency of this research lies in several key dimensions. First, in terms of cultural context relevance, integrating local wisdom into literacy and numeracy assessments increases student engagement and fosters cultural pride. Second, holistic competency development is achieved through authentic assessment, which evaluates students not only academically but also socially and emotionally. Third, improving the quality of learning can be realized when teachers adopt authentic assessments that are reflective of real-world applications, allowing for meaningful learning experiences. Fourth, the study also addresses educational challenges in the era of globalization and technological advancement, where learning must be adaptive and contextually relevant. Lastly, it offers a contribution to educational policy, providing empirical insights for policymakers in formulating inclusive and locally responsive educational systems.

Despite these potentials, challenges remain in the implementation of authentic assessments in elementary education. Many teachers lack sufficient understanding and training in designing and applying effective authentic assessment methods. Consequently, existing assessments often fail to capture the holistic abilities of students or connect learning with their cultural environment. Furthermore, Indonesia's low performance in international assessments underscores the urgency for improvement. As reported by the Programme for International Student Assessment (PISA), Indonesian students' numeracy performance remains among the lowest globally—ranking 72nd out of 79 participating countries in 2018 [18]. These findings indicate that both literacy and numeracy mastery among Indonesian students require significant strengthening through more contextual and culturally grounded learning and assessment approaches.

The lack of literacy skills in the community can also be attributed to multiple interrelated factors, including limited access to reading resources, inadequate teacher training, lack of public awareness about the importance of literacy, overreliance on digital media, weak reading culture, low-quality reading materials, and economic constraints that divert focus from education [19]-[22]. Addressing these complex issues requires a collaborative effort between governments, schools, and communities to enhance the quality, accessibility, and contextual relevance of education. In light of these challenges, this study focuses on examining how authentic literacy and numeracy assessments based on local wisdom can be effectively implemented in elementary schools in Ternate City. The objectives of this research are fivefold: (1) to identify and develop a conceptual framework for authentic assessment that integrates local wisdom into literacy and numeracy learning; (2) to document effective methods for measuring literacy and numeracy that reflect local cultural contexts; (3) to analyze the impact of authentic assessment on student motivation, engagement, and learning outcomes; (4) to identify obstacles faced by teachers in implementing culturally based authentic assessment and propose solutions; and (5) to explore stakeholder perceptions—students, teachers, and parents—regarding the application and relevance of such assessments in schools.

The expected outcomes of this study include several benefits. It can improve the quality of education by offering teachers more relevant and contextualized assessment models; strengthen students' cultural identity by fostering appreciation of local traditions; enhance student motivation and engagement by linking learning with familiar contexts; provide guidelines for curriculum development that reflect local needs and values; and serve as a reference for future research exploring similar themes in other regions [23]-[27]. Furthermore, the research contributes to teacher capacity building, equipping educators with the knowledge and skills necessary to design and implement innovative, culturally responsive assessment methods.

Most previous studies on literacy and numeracy assessment in Indonesia have focused predominantly on standardized or general authentic assessment frameworks that neglect cultural contextualization. Few have examined the integration of local wisdom into assessment practices, especially in culturally rich regions such as Ternate. Moreover, although the Merdeka Curriculum (Independent Curriculum) promotes contextual and holistic learning, there remains a lack of empirical studies operationalizing these principles through culturally based assessments. This research addresses that gap by exploring how authentic assessments grounded in Ternate's local wisdom can enhance students' literacy and numeracy outcomes while preserving cultural values. It provides evidence-based insights into the challenges, strategies, and implications of integrating cultural context into educational assessment a domain that remains underexplored in Indonesian education research.

By embedding elements of local culture, language, and folklore into literacy and numeracy learning, this study aims to make learning more meaningful and contextually relevant for students. Consequently, the formulation of the research problem in this study is: How do elementary school students perceive authentic assessments based on local wisdom?

2. RESEARCH METHOD

This study employs a quantitative descriptive method designed to analyze the implementation of authentic literacy and numeracy assessments based on local wisdom in elementary schools in Ternate City. The quantitative descriptive approach was chosen because it allows for the systematic description of existing conditions, opinions, and behaviors without manipulating variables, thus providing a factual and comprehensive picture of the phenomenon under investigation. The research focuses on exploring how authentic assessment practices integrated with local wisdom contribute to developing students' literacy and numeracy skills as aligned with the Independent Curriculum.

Data were collected through a survey method utilizing test instruments and structured interviews. The survey involved fifth-grade students from four schools, namely Elementary School 1 Ternate City, Elementary School 2 Ternate City, Islamic Elementary School Fathul Munir Ternate City, and Islamic Elementary School Nurul Hasan Ternate City. The instruments consisted of literacy and numeracy test items reflecting contextual problems rooted in the students' local environment and culture, ensuring alignment with local wisdom-based learning practices. Additionally, in-depth interviews were conducted with selected students to gain deeper insights into their experiences and perceptions of authentic assessments in literacy and numeracy contexts.

The population of this study included all fifth-grade students from the participating schools, while the sample was selected using a simple random sampling technique to ensure equal representation of students from diverse school backgrounds. A total of 180 students participated in completing the literacy and numeracy test instruments, and 12 students (three students from each school) were subsequently interviewed to obtain qualitative insights, resulting in a combined total sample of 196 participants. This multi-source sampling provided both quantitative data from test scores and qualitative data from interviews, allowing for a richer interpretation of results.

The data collection instruments consisted of a questionnaire, a test instrument, and an interview guide that had been validated by measurement and content experts to ensure reliability, construct validity, and cultural relevance. The questionnaire and tests collected information about students' literacy and numeracy competencies, while the interview guidelines explored students' perceptions, challenges, and reflections regarding the implementation of authentic assessment practices rooted in local cultural contexts.

Data analysis employed quantitative descriptive statistical techniques to process the test and questionnaire data, including frequency distributions, mean scores, and percentages to describe the patterns of literacy and numeracy performance among students. Meanwhile, the qualitative data obtained from interviews were analyzed thematically using a qualitative descriptive approach to identify key themes, patterns, and interpretations regarding students' understanding of authentic assessment and local wisdom integration. The combination of these two analytical techniques enabled the researchers to triangulate findings and derive a comprehensive understanding of the topic.

This research was conducted over a three-month period, from June to September 2024, encompassing the stages of instrument validation, data collection, and data analysis. The results of this study are expected to contribute to the enhancement of authentic assessment practices in elementary education, particularly by integrating local wisdom to foster contextualized literacy and numeracy skills in alignment with the goals of the Independent Curriculum in Indonesia.

3. RESULTS AND DISCUSSION

From the analysis of data from 180 respondents divided into four schools you can see the results in Table 1.

Table 1. Statistical Value of Authentic Assessment of Literacy and Numeracy

		L1	L2	L3	L4	N1	N2	N3	N4	Total
N	Valid	180	180	180	180	180	180	180	180	180
	Missing	0	0	0	0	0	0	0	0	0
Mean		2.56	1.61	1.84	1.89	1.69	1.77	1.86	1.96	1.74
Std. Error of Mean		.084	.052	.057	.063	.057	.063	.063	.068	.065
Std. Deviation		1.125	.697	.761	.849	.763	.845	.840	.914	.868
Skewness		-.104	1.417	.655	.924	.962	.960	.794	.621	1.157
Std. Error of Skewness		.181	.181	.181	.181	.181	.181	.181	.181	.181
Kurtosis		-	3.003	.130	.515	.590	.334	.087	-.512	.770
		1.362								
Std. Error of Kurtosis		.360	.360	.360	.360	.360	.360	.360	.360	.360
Minimum		1	1	1	1	1	1	1	1	8
Maximum		4	4	4	4	4	4	4	4	27
Sum		460	289	332	341	305	319	334	352	2585

Note:

L : Literacy

N : Numeracy

From table 1, No missing data was found (missing data = 0), so all respondents fully contributed to the analysis. The distribution of the number of students was quite balanced among the schools, with Islamic Elementary School Nurul Hasan having the largest number of respondents (27.8%) and Elementary School 2 having the smallest number (21.7%). The average total score for all literacy and numeracy indicators is 14.36 out of a maximum score of 27. The average literacy score is generally higher than numeracy, with the highest score in Literacy1 (mean = 2.56), while the lowest score is in Literacy2 (mean = 1.61). For numeracy, the means ranged from 1.69 to 1.96, indicating fairly consistent but relatively low performance.

The relatively large standard deviations for each indicator (around 0.7–1.1) indicate a fairly wide distribution of scores among students. For example, Literacy 1 has the highest standard deviation (1.125), indicating high variation in student achievement on this indicator. This is also reflected in the wide range of minimum and maximum scores (1–4 for each indicator, 8–27 for the total score). Most of the data distributions tend to be positive or symmetrical. However, Literacy2 (skewness = 1.417) and Numeracy4 (skewness = 1.157) show significant positive skewness, indicating that most students scored low on this indicator. Literacy1, on the other hand, shows negative skewness (-0.104), indicating that more students scored high. The highest kurtosis is found in Literacy2 (3.003), indicating a sharp peak in the distribution, meaning that the majority of scores are concentrated in one category. The frequency distribution for Literacy 1 shows that 95.6% of students scored only 1 or 2, while only 3.9% scored 4. A similar trend occurred for Literacy 2 through Literacy 4, where the majority of students remained in the low-score category. This demonstrates significant challenges in achieving ideal basic literacy competencies. A similar trend also occurred in numeracy skills. For example, in Numeracy 1, 83.3% of students only scored 1 or 2. Only 5% of students managed to achieve the maximum score (4). This indicates that students' numerical skills tend not to be optimally developed, and their distribution tends to be uneven, approaching a left-skewed curve pattern.

The combined total score for all indicators ranged from 8 to 27. A total of 13.3% of students scored 15, and 12.8% scored 12. Only 0.6% of students achieved the maximum score of 27, indicating a gap in learning achievement. This distribution pattern shows that the majority of students are in the lower-middle group. The comparison between schools shows that Islamic Elementary School Nurul Hasan recorded the highest average scores on literacy and numeracy indicators, while Elementary School 1 and Elementary School 2 recorded lower scores. This may reflect differences in learning facilities, student backgrounds, or teaching quality at each school. High skewness and kurtosis values for some indicators, particularly Literacy2 and Numeracy4, indicate an imbalance in the distribution of student abilities. With the majority of students concentrated in low scores and only a few in high scores, differentiated educational interventions are urgently needed to reduce this gap.

Table 2. Analysis Data Interview

No	Theme Code	Respondent's Statement (Data Display)	Interpretation (Data Reduction)	Conclusion
1	Teachers' Understanding of Authentic Assessment	"We've often assessed practicals and projects, but we haven't yet integrated them into local culture. We usually just	Teachers understand authentic assessment in general, but are not yet able to relate it to	Conceptual understanding already exists, but the application of local

No	Theme Code	Respondent's Statement (Data Display)	Interpretation (Data Reduction)	Conclusion
		assess students' work in class." (T2)	the local cultural context.	wisdom-based assessments is still limited.
2	Implementation of Contextual Assessment in Leading Schools	"We try to relate learning to children's everyday lives. For example, when learning to count, we use examples of buying and selling at the market, or we write stories about Ternate traditions." (TNH)	Teachers use local cultural and social contexts as learning resources.	Schools with contextual practices show higher literacy and numeracy outcomes.
3	Student Learning Experiences in Local Contexts	"I enjoy learning to count while role-playing buying and selling at the market. This way, I learn how to bargain and use money, not just counting in a book." (SFM)	Contextual learning makes students more active and understand the concept of numeracy well.	Local wisdom-based activities increase students' understanding and interest in learning.
4	Difficulties in Implementing Authentic Assessment	"It is difficult to create questions or assignments that are appropriate to local culture because there are no guidelines." (T1)	Teachers experience difficulties in designing authentic, culture-based assessment instruments.	Teacher guidance and training is needed to develop contextual assessments.
5	Limited Time and Learning Resources	"We are also pressed for time to complete the material, so contextual assessments are rarely carried out." (T2)	Curriculum and time pressures make it difficult for teachers to implement project-based assessment.	Flexible policy support and time management are needed for authentic assessment.
6	Students' Perceptions of Local Cultural Learning	"If I learn to use the Ternate language or tell stories about local customs, I feel proud and enthusiastic about learning." (SNH)	Local wisdom fosters a sense of pride and increases student motivation.	Local cultural integration strengthens students' identity and learning motivation.
7	Social Meaning and Character Values of Authentic Assessment	"Besides the children understanding the lessons better, they also learn good manners and cooperation when doing culture-based projects." (TNH)	Contextual learning not only improves academics, but also students' social and moral character.	Locally based authentic assessments contribute to the formation of students' cultured character.
8	Inter-School Gap	"Most of our children are not used to contextual questions, so they are often confused if the questions are not like those in the book.." (T1)	Students in public schools are still accustomed to traditional and mechanical assessment patterns.	Differences in learning approaches cause gaps in literacy and numeracy outcomes between schools.

To complement the quantitative findings presented in Table 1, which revealed that students' literacy and numeracy competencies remain at a low to moderate level, qualitative data were obtained through interviews with teachers and students from four participating schools. The interview analysis followed the Miles and Huberman model, which includes three stages: data reduction, data display, and conclusion drawing. From this analysis, five main themes emerged: (1) teachers' understanding of authentic assessment, (2) implementation of contextual assessment based on local wisdom, (3) structural and technical challenges, (4) student motivation and engagement, and (5) character development through culturally grounded assessment.

Teachers' Understanding of Authentic Assessment

The interviews revealed that teachers' conceptual understanding of authentic assessment varies across schools. Most teachers understood authentic assessment as a method that evaluates students' performance or

products, but few were able to connect it with cultural and local contexts. One teacher from Elementary School stated:

"We've often assessed practicals and projects, but we haven't yet integrated them into local culture. We usually just assess students' work in class."

This statement shows that while teachers recognize the importance of authentic assessment, its implementation remains limited to conventional classroom tasks. In contrast, teachers from Islamic Elementary School NH demonstrated a deeper understanding and practice of integrating local wisdom in learning and assessment:

"We try to relate learning to children's everyday lives. For example, when learning to count, we use examples of buying and selling at the market, or we write stories about Ternate traditions."

This variation reflects the quantitative results, where Islamic Elementary School NH recorded the highest literacy and numeracy scores, suggesting that teachers who connect assessment to local culture tend to produce better student outcomes. The findings align with Wiggins and McTighe's framework, which emphasizes that authentic assessment should mirror real-world tasks and cultural relevance to achieve meaningful learning [28].

Implementation of Contextual Assessment Based on Local Wisdom

Students expressed greater enthusiasm and comprehension when learning activities were connected to local cultural contexts. For example, a student from Islamic Elementary School FM remarked:

"I enjoy learning to count while role-playing buying and selling at the market. This way, I learn how to bargain and use money, not just counting in a book."

This statement illustrates how contextual learning activities enhance students' engagement and practical understanding, particularly in numeracy. In contrast, students from Elementary School, who primarily engaged in textbook-based learning, reported difficulty in understanding abstract problems:

"Usually, we just work on problems from the textbook. Sometimes it's difficult because we don't understand what they mean. But if we explain things using examples from home or at the market, I understand them more quickly."

These insights reinforce the quantitative data, which showed low mean scores in numeracy indicators (1.69–1.96), indicating that students struggle with numerical reasoning when it is detached from real-life situations. Integrating local wisdom, such as traditional markets or Ternate language counting systems, provides a meaningful bridge between abstract mathematical concepts and daily experiences, consistent with Freudenthal's *realistic mathematics education* principle [29].

Structural and Technical Challenges

Despite the recognized benefits, teachers face several challenges in implementing authentic assessment based on local wisdom. Limited instructional time, lack of assessment guides, and inadequate resources were among the main obstacles. A teacher from Elementary School explained:

"It's difficult to create questions or assignments that are culturally appropriate because there are no guidelines. Sometimes we're also pressed for time to complete the material."

This finding suggests that the institutional structure of schools still prioritizes completion of the syllabus over contextual learning, leading teachers to favor standardized tests. This challenge supports the quantitative observation of high standard deviations (0.7–1.1) and positive skewness in most indicators, showing inconsistent achievement and a concentration of low scores among students. Without clear policy support and teacher training, the implementation of authentic assessment tends to remain fragmented and unsystematic.

Student Motivation and Engagement through Cultural Integration

Interviews with students demonstrated that incorporating local cultural elements into learning fosters motivation, pride, and engagement. One student from Islamic Elementary School NH noted:

"If I learn to use the Ternate language or tell stories about local customs, I feel proud and enthusiastic about learning."

This indicates that the inclusion of cultural identity in learning materials enhances affective engagement and self-esteem. Similarly, another student shared that learning through local examples made lessons more relatable and easier to understand. These insights are consistent with the notion of *culturally responsive pedagogy* Grant, which asserts that connecting academic content with students' cultural backgrounds improves comprehension and retention [31]. The quantitative data showing slightly higher literacy means compared to numeracy also align with this result students engage more readily with language-based and narrative learning when it reflects their own culture and experience.

Character Development through Authentic and Cultural Learning

Teachers also highlighted that authentic assessment grounded in local wisdom contributes to students' holistic development beyond academics. A teacher from Islamic Elementary School NH remarked:

"Besides the children understanding the lessons better, they also learn good manners and cooperation when doing culture-based projects."

This suggests that culturally contextual assessment not only enhances cognitive learning but also cultivates social and moral values, such as cooperation, respect, and cultural appreciation. This aligns with Vygotsky's *sociocultural theory*, which posits that learning is socially mediated and shaped by cultural tools and interactions. The qualitative findings thus reinforce that authentic assessment can serve as both an evaluative and formative process for character education.

The integration of quantitative and qualitative findings provides a comprehensive understanding of how authentic assessment based on local wisdom influences literacy and numeracy learning in elementary schools in Ternate City. Quantitative results revealed that students' overall performance was still within the low-to-moderate category, with a total mean score of 14.36 out of 27. Literacy indicators showed slightly higher averages than numeracy indicators, yet both domains exhibited significant variability, as indicated by high standard deviations and positive skewness values. These statistical results signify that most students are still concentrated in the lower achievement levels, and learning outcomes remain uneven across schools.

The qualitative data, derived from in-depth interviews with teachers and students, enrich these findings by uncovering the underlying factors contributing to such patterns. Teachers generally understand authentic assessment as a meaningful learning evaluation process but struggle to integrate local cultural contexts consistently. Schools like Islamic Elementary School Nurul Hasan, which actively incorporate local traditions such as using the Ternate language in mathematical problem-solving, engaging students in market-based counting activities, or writing stories about local customs achieved higher literacy and numeracy outcomes. This indicates that contextualized learning experiences foster better conceptual understanding and stronger student engagement. Conversely, schools that relied primarily on textbook-based assessments tended to show lower student performance, confirming the importance of cultural contextualization in assessment design. The convergence between both data sets suggests that students' low literacy and numeracy levels are not merely due to cognitive limitations but rather to the lack of meaningful, context-based learning experiences. The findings support Freudenthal's notion of *realistic education*, emphasizing that learning becomes effective when linked to real-life experiences. They also align with Wiggins and McTighe's view that authentic assessment should mirror the complex challenges of everyday life, allowing students to apply their knowledge functionally rather than mechanically [28].

Furthermore, the interviews revealed that integrating local wisdom into authentic assessment nurtures not only academic competence but also character formation and cultural identity. Students expressed greater enthusiasm and pride when engaging with lessons connected to their community, language, and traditions. Teachers observed that such approaches fostered social values, cooperation, and respect for local culture—demonstrating that assessment can simultaneously serve cognitive and affective domains. These outcomes are consistent with Vygotsky's *sociocultural theory*, which posits that learning occurs most effectively when mediated through culturally meaningful interactions [32].

Despite these promising results, the study also identified systemic and structural challenges that limit the full realization of authentic, culturally embedded assessment. Teachers face constraints related to time management, resource availability, and the absence of clear assessment guidelines. As a result, many continue to rely on conventional evaluation methods that prioritize test results over authentic learning processes. This finding mirrors the broader issue in Indonesia's educational system, where standardized assessment practices often overshadow formative and contextually relevant evaluation models [33]-[36]. Addressing this gap requires institutional reform that empowers teachers through continuous professional development and policy support. From a pedagogical perspective, the findings underscore the importance of teacher capacity-building programs that focus on designing authentic assessment tools aligned with local wisdom. Teachers must be trained to develop culturally responsive tasks, such as project-based assignments, community observations, and storytelling evaluations, that connect classroom learning with real-world situations. Moreover, curriculum developers and policymakers should consider embedding cultural and contextual dimensions into national assessment standards under the Independent Curriculum (*Kurikulum Merdeka*), ensuring that learning evaluation reflects Indonesia's cultural diversity.

At the classroom level, the implications are twofold. First, teachers should adopt differentiated instruction strategies to accommodate variations in students' abilities, as reflected in the wide distribution of scores. Second, integrating culturally relevant materials can help bridge the gap between abstract literacy and numeracy concepts and students' lived experiences, thus enhancing both comprehension and retention. Formative and authentic assessment must be seen as part of the learning process itself, not merely a measurement tool [37]-[43]. In terms of broader educational implications, authentic assessment based on local wisdom supports the vision of "education for cultural sustainability", where local values and global

competencies coexist harmoniously. By situating learning within students' cultural realities, schools can promote not only higher academic achievement but also social inclusion, cultural preservation, and national identity formation. This approach aligns with UNESCO's (2020) framework for inclusive education, which advocates integrating local knowledge systems into formal education as a pathway to equitable and meaningful learning.

4. CONCLUSION

This study confirms the strategic role of the Mosque Youth Association as a behavioristic laboratory of character education, where religiosity and nationalism are simultaneously cultivated through repeated practices, experiential activities, and reinforcement mechanisms. Across three Bandung secondary schools, the findings demonstrate that religious activities (e.g., Qur'anic studies, congregational prayers), social projects, and leadership training provide consistent stimuli that shape students' nationalist-religious behaviors. Positive reinforcement in the form of recognition and trust, alongside corrective sanctions, sustains these behaviors and embeds them as habits.

Theoretically, this study contributes to the literature by advancing an integrated model of character education that unites behavioristic learning theory, experiential learning, and Social Identity Theory. It extends prior research that treated religiosity and nationalism separately, showing that both values can be harmonized in a single pedagogical arena. This conceptualization enriches international debates on character education in multicultural societies, where identity conflicts between religion and nation often arise. Practically, the findings underline the potential of religious extracurricular organizations as partners in achieving the Pancasila Student Profile and implementing the Merdeka Curriculum. Schools are encouraged to provide institutional support, financial resources, and innovative programming to strengthen the role of Mosque Youth Associations. Policymakers should recognize these organizations within formal education policy frameworks, ensuring alignment between extracurricular activities and national character-building agendas.

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REFERENCES

- [1] J. A. Alamprese, and K. Hoogland, "Promoting literacy and numeracy in adult learning and education," *New Directions for Adult and Continuing Education*, vol. 2025, no. 185, pp. 33-38, 2025, doi: 10.1002/ace.20555.
- [2] Hanemann, U., & Robinson, C. (2022). Rethinking literacy from a lifelong learning perspective in the context of the Sustainable Development Goals and the International Conference on Adult Education. *International Review of Education*, 68(2), 233-258, 2022, doi: 10.1007/s11159-022-09949-7.
- [3] Gupta, R. (2021). The role of pedagogy in developing life skills. *Margin: The Journal of Applied Economic Research*, 15(1), 50-72, 2021, doi: 10.1177/0973801020974786.
- [4] D. A. Kurniawan, A. Astalini, D. Darmaji, T. Tanti, and S. Maryani, "Innovative learning: Gender perception of e-module linear equations in mathematics and physics," *Indonesian Journal on Learning and Advanced Education (IJOLAE)*, vol. 4, no. 2, pp. 92-106, 2022, doi: 10.23917/ijolae.v4i2.16610.
- [5] E. Miller, and I. Konstantinou, "Using reflective, authentic assessments to embed employability skills in higher education," *Journal of Work-Applied Management*, vol. 14, no. 1, pp. 4-17, 2022, doi: 10.1108/JWAM-02-2021-0014.
- [6] Z. Y. Wong, and G. A. D. Liem, "Student engagement: Current state of the construct, conceptual refinement, and future research directions," *Educational Psychology Review*, vol. 34, no. 1, pp. 107-138, 2022, doi: 10.1007/s10648-021-09628-3.
- [7] T. Tanti, A. Astalini, D. A. Kurniawan, D. Darmaji, T. O. Puspitasari, and I. Wardhana, "Attitude for physics: The condition of high school students," *Jurnal Pendidikan Fisika Indonesia*, vol. 17, no. 2, pp. 126-132, 2021, doi: 10.15294/jpfi.v17i2.18919.
- [8] N. Bergdahl, "Engagement and disengagement in online learning," *Computers & Education*, vol. 188, pp. 104561, 2022, doi: 10.1016/j.compedu.2022.104561.
- [9] G. Maimaiti, C. Jia, and K. F. Hew, "Student disengagement in web-based videoconferencing supported online learning: an activity theory perspective," *Interactive Learning Environments*, vol. 31, no. 8, pp. 4883-4902, 2023, doi: 10.1080/10494820.2021.1984949.
- [10] S. A. Sakti, S. Endraswara, and A. Rohman, "Revitalizing local wisdom within character education through ethnopedagogy approach: A case study on a preschool in Yogyakarta," *Heliyon*, vol. 10, no. 10, 2024, doi: 10.1016/j.heliyon.2024.e31370.
- [11] Y. Wijayanti, "Enhancing students' cultural identity through history education based on local wisdom of Kagaluhan Values," *Educational Process: International Journal*, vol. 14, pp. e2025075, 2025, doi: 10.22521/edupij.2025.14.75.
- [12] R. Machfiroh, I. Rohayani, and D. Hidayat, "Strategies for revitalizing tri tangtu local wisdom among college students," *Al-Ishlah: Jurnal Pendidikan*, vol. 16, no. 1, pp. 605-615, 2024, doi: 10.35445/alishlah.v16i1.4940.
- [13] T. Tanti, D. Deliza, and S. Hartina, "The effectiveness of using smartphones as mobile-mini labs in improving students' beliefs in physics," *JIPF (Jurnal Ilmu Pendidikan Fisika)*, vol. 9, no. 3, pp. 387-394, 2024, doi:

- 10.26737/jipf.v9i3.5185.
- [14] R. Rasidi, G. Istiningih, R. F. Masithoh, and M. I. Rosyidi, "Education based on local wisdom: An alternative model for the integration of cultural values in the school curriculum in Indonesia," *International Journal of Contemporary Studies in Education*, vol. 4, no. 2, pp. 114-135, 2025, doi: 10.56855/ijcse.v4i2.1521.
 - [15] T. J. Age, "Performance-Based assessment: A transformative approach to enhancing mathematics learning in ubuntu classrooms across Sub-Saharan Africa," *European Journal of STEM Education*, vol. 10, no. 1, pp. 04, 2025, doi: 10.20897/ejsteme/16420.
 - [16] T. Tanti, W. Utami, D. Deliza, and M. Jahanifar, "Investigation in vocation high school for attitude and motivation students in learning physics subject", *Jor. Eva. Edu*, vol. 6, no. 2, pp. 479-490, 2025, doi: 10.37251/jee.v6i2.1452.
 - [17] C. M. Evans, "Applying a culturally responsive pedagogical framework to design and evaluate classroom performance-based assessments in Hawai 'i," *Applied Measurement in Education*, vol. 36, no. 3, pp. 269-285, 2023, doi: 10.1080/08957347.2023.2214655.
 - [18] OECD. *PISA 2018 results (Volume I): What students know and can do*. OECD Publishing, 2019, doi: 10.1787/5f07c754-en.
 - [19] M. J. D. Q. Abbas, and S. Hussain, "Low literacy rate at primary level: Identification of causes and impacts," *Pakistan Social Sciences Review*, vol. 5, no. 2, pp. 492-506, 2021, doi: 10.35484/pssr.2021(5-II)39.
 - [20] O. Salubi, and U. Majavu, "Toward the development of a framework for literacy support and promotion by public libraries in financially and infrastructurally low-resourced territories," *Reference Services Review*, vol. 52, no. 2, pp. 218-230, 2024, doi: 10.1108/RSR-06-2023-0056.
 - [21] A. C. Starks, and S. M. Reich, "What about special ed?": Barriers and enablers for teaching with technology in special education," *Computers & Education*, vol. 193, pp. 104665, 2023, doi: 10.1016/j.compedu.2022.104665.
 - [22] A. Gumartifa, S. Sofendi, and S. Mirizon, "Enhancing English literacy through ethnopedagogy: A focus on cultural relevance in teaching practices," *Journal of Languages and Language Teaching*, vol. 13, no. 1, pp. 294-305, 2025, doi: 10.33394/jollt.v13i1.12934.
 - [23] T. Tanti, D. Darmaji, A. Astalini, D. A. Kurniawan, and M. Iqbal, "Analysis of user responses to the application of web-based assessment on character assessment," *Journal of education technology*, vol. 5, no. 3, pp. 356-364, 2021, doi: 10.23887/jet.v5i3.33590.
 - [24] D. P. Ratri, S. Rachmajanti, M. Anugerahwati, E. D. Laksmi, and A. Gozali, "Fostering cultural competence: developing an English syllabus for young learners in the Indonesian EFL context with emphasis on local culture to maintain students' identity," *Cogent Education*, vol. 12, no. 1, pp. 2440177, 2025, doi: 10.1080/2331186X.2024.2440177.
 - [25] A. C. Dewi, M. N. Hakim, and C. Djafar, "Integrating local culture in the development of Indonesian language teaching materials for general education," *AL-ISHLAH: Jurnal Pendidikan*, vol. 17, no. 2, pp. 2961-2978, 2025, doi: 10.35445/alishlah.v17i2.5891.
 - [26] E. Purwaningsih, and R. Ridha, "The role of traditional cultural values in character education," *Pakistan Journal of Life & Social Sciences*, vol. 22, no. 2, 2024, doi: 10.57239/PJLSS-2024-22.2.00396.
 - [27] E. Setyowati, H. Hendratno, and W. Sukartiningsih, "Assessing the impact of local wisdom on Indonesian language learning in primary schools. *Scaffolding: Jurnal Pendidikan Islam dan Multikulturalisme*, vol. 6, no. 3, pp. 198-212, 2024, doi: 10.37680/scaffolding.v6i3.6473.
 - [28] G. Wiggins and J. McGighe, *Understanding by Design*, 2nd ed. Alexandria, VA: ASCD, 2005.
 - [29] H. Freudenthal, *Revisiting Mathematics Education: China Lectures*. Dordrecht: Kluwer, 1991.
 - [30] L. Darling-Hammond, and F. Adamson, *Beyond the bubble test: How performance assessments support 21st-century learning*. Jossey-Bass, 2014.
 - [31] K. K. Grant, *Educators' Perceptions of Culturally Relevant Pedagogy: An Exploratory Qualitative Case Study* (Doctoral dissertation, University of Phoenix), 2024.
 - [32] L. S. Vygotsky, *Mind in Society: The Development of Higher Psychological Processes*. Cambridge, MA: Harvard Univ. Press, 1978. doi: 10.2307/j.ctvjf9vz4.
 - [33] I. Widiastuti, "Assessing the impact of education policies in Indonesia: Challenges, achievement, and future direction," *AL-ISHLAH: Jurnal Pendidikan*, vol. 17, no. 2, pp. 1955-1964, 2025, doi: 10.35445/alishlah.v17i2.6803.
 - [34] M. Arsyad Arrafii, "Assessment reform in Indonesia: Contextual barriers and opportunities for implementation," *Asia Pacific Journal of Education*, vol. 43, no. 1, pp. 79-94, 2023, doi: 10.1080/02188791.2021.1898931.
 - [35] L. Lismawati, A. R. Ramadhan, and A. P. Astuti, "Prophetic framework in educational evaluation: A qualitative study on minimum competency assessment in Indonesia," *Jurnal Pendidikan Agama Islam (Journal of Islamic Education Studies)*, vol. 12, no. 1, pp. 1-22, 2024, doi: 10.15642/jpai.2024.12.1.1-22.
 - [36] L. Xu, Y. Li, J. Cui, and F. Saleem, "Assessing the moderating effects of tertiary education policy on the relationship between education system factors and carbon emissions in China," *Discover Sustainability*, vol. 6, nol. 1, pp. 990, 2025, doi: 10.1007/s43621-025-01929-9.
 - [37] E. J. Barrientos Hernán, V. M. López-Pastor, E. Lorente-Catalán, and D. Kirk, "Challenges with using formative and authentic assessment in physical education teaching from experienced teachers' perspectives," *Curriculum Studies in Health and Physical Education*, vol. 14, no. 2, pp. 109-126, 2023, doi: 10.1080/25742981.2022.2060118.
 - [38] A. S. Saher, A. M. J. Ali, D. Amani, and F. Najwan, "Traditional versus authentic assessments in higher education," *Pegem Journal of Education and Instruction*, vol. 12, no. 1, pp. 283-291, 2022, doi: 10.47750/pegegog.12.01.29.
 - [39] D. H. Murphy, J. L. Little, and E. L. Bjork, "The value of using tests in education as tools for learning—not just for assessment," *Educational Psychology Review*, vol. 35, no. 3, pp. 89, 2023, doi: 10.1007/s10648-023-09808-3.
 - [40] J. H. Nieminen, M. Bearman, and R. Ajjawi, "Designing the digital in authentic assessment: Is it fit for purpose?," *Assessment & Evaluation in Higher Education*, vol. 48, no. 4, pp. 529-543, 2023, doi:

- 10.1080/02602938.2022.2089627.
- [41] R. Fadilah, H. Y. Ayudhia, V. S. Chairani, and F. Afni, "Assessment of English language teaching for 21st century: Teachers' perspectives on traditional and alternative assessment," *JADEs Journal of Academia in English Education*, vol. 4, no. 1, pp. 108-130, 2023, doi: 10.32505/jades.v4i1.6023.
- [42] X. Liao, X. Zhang, Z. Wang, and H. Luo, "Design and implementation of an AI-enabled visual report tool as formative assessment to promote learning achievement and self-regulated learning: An experimental study," *British Journal of Educational Technology*, vol. 55, no. 3, pp. 1253-1276, 2024, doi: 10.1111/bjet.13424.
- [43] Koretsky, M. D., McColley, C. J., Gugel, J. L., & Ekstedt, T. W. (2022). Aligning classroom assessment with engineering practice: A design-based research study of a two-stage exam with authentic assessment. *Journal of Engineering Education*, 111(1), 185-213, 2022, doi: 10.1002/jee.20436.