

# Cultural Responsiveness in Language Assessment: Developing Equitable Evaluation Frameworks for Diverse Linguistic Communities

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## ABSTRACT

Indonesia's linguistic diversity, with over 700 regional languages, challenges traditional language assessment practices that privilege monolingual norms and marginalize multilingual learners. Existing frameworks often overlook cultural assets and translanguaging practices essential to equitable evaluation. This study employed a sequential three-phase mixed-methods design. Phase 1 involved a systematic review of 247 articles and 18 policy documents. Phase 2 included participatory co-design with 84 educators and 156 community stakeholders across five Indonesian metropolitan areas. Phase 3 validated the resulting Culturally Responsive Language Assessment Framework (CRLAF) with 1,247 students and 94 teachers using both quantitative (CFA, RMSEA, reliability tests) and qualitative analyses. CRLAF significantly improved academic self-efficacy ( $d = 1.42$ ), reduced assessment anxiety ( $d = -1.89$ ), and increased both Indonesian language confidence and regional language pride. Academic achievement scores improved ( $d = 0.72$ ), and achievement gaps among ethnic groups narrowed by up to 54%. The framework achieved high reliability ( $\alpha = 0.94$ ) and strong cultural validity across ethnic and linguistic groups. CRLAF reframes assessment as culturally empowering rather than exclusionary. By integrating local values (e.g., *gotong royong*, *bhinneka tunggal ika*) and translanguaging practices, it aligns psychometric rigor with cultural fairness. The framework offers scalable implications for Indonesian education policy and serves as a model for multilingual, postcolonial contexts globally.

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## 1. INTRODUCTION

Indonesia's linguistic landscape presents both opportunities and challenges for educational assessment. With over 700 regional languages (Lauder, 2008; Eberhard et al., 2019) and increasing internal migration patterns (Ananta et al., 2015), Indonesian classrooms have become increasingly

diverse linguistic environments. This diversity is particularly pronounced in metropolitan areas such as Jakarta, Surabaya, Medan, Makassar, and Denpasar, where students from various ethnic and linguistic backgrounds converge (Musgrave, 2014). Language assessment in Indonesia has historically followed centralized, monolingual approaches that privilege Standard Indonesian (Bahasa Indonesia) while marginalizing regional languages and local knowledge systems (Zein, 2016). Recent research by Indonesian scholars has documented significant disparities in educational outcomes between students from dominant linguistic groups and those from minority language communities (Hamied & Lengkanawati, 2019; Sundari, 2018).

Analysis of Indonesian educational research reveals critical gaps in culturally responsive assessment practices. Systematic review of Indonesian educational journals (2015-2023) identified only 12% of assessment studies that explicitly integrated multicultural perspectives (Sari & Rahman, 2022). Furthermore, 78% of language assessments in Indonesian schools continue to rely on single-method approaches that do not accommodate translanguaging practices common among Indonesian multilingual students (Adrianto & Kurniawan, 2021).

This study aims to address the critical need for equitable assessment practices in Indonesia's multilingual educational landscape through a comprehensive examination of culturally responsive language assessment. The primary objective focuses on identifying and validating the fundamental principles and characteristics that should guide culturally responsive language assessment within Indonesian educational contexts, considering the unique sociocultural dynamics of Indonesia's diverse ethnic and linguistic communities. This involves exploring how traditional Indonesian values such as *gotong royong* (collective cooperation), *musyawarah mufakat* (consensus-building), and *bhinneka tunggal ika* (unity in diversity) can be systematically integrated into assessment frameworks without compromising psychometric rigor. Previous frameworks, such as Gay's (2018) culturally responsive teaching and Paris & Alim's (2017) culturally sustaining pedagogy, provide theoretical foundations but lack operationalised assessment tools for multilingual contexts. Similarly, García & Wei's (2014) translanguaging theory offers pedagogical insights but limited guidance for formal evaluation practices. In contrast, CRLAF integrates these theoretical perspectives into a comprehensive assessment system specifically designed for Indonesian multilingual contexts, incorporating local values of *gotong royong* and *bhinneka tunggal ika* while maintaining psychometric rigor.

The secondary objective centers on developing a systematic methodology for creating assessment frameworks that ensure both fairness and validity across Indonesia's diverse linguistic communities, ranging from major languages like Javanese and Sundanese to smaller regional languages in eastern Indonesia. This includes investigating how translanguaging practices commonly observed in Indonesian multilingual contexts can be accommodated within formal assessment structures while maintaining educational standards aligned with national curriculum objectives.

The tertiary objective seeks to identify and validate practical implementation strategies that enable Indonesian educators, many of whom may lack specific training in multicultural assessment practices, to effectively integrate culturally responsive assessment approaches into their multilingual classrooms. This encompasses developing professional development models, creating resource materials adapted to Indonesian educational contexts, and establishing community engagement protocols that respect local cultural hierarchies and decision-making processes while promoting inclusive assessment practices.

The novelty of this research lies in its integrative design-based approach to developing CRLAF specifically for Indonesian contexts. Unlike previous studies that focused primarily on critique, this research constructs a comprehensive framework grounded in Indonesian cultural values of *gotong royong* (collective cooperation) and *bhinneka tunggal ika* (unity in diversity).

## 2. METHODS

### 2.1 Study Design and Timeline

This research employed a comprehensive three-phase sequential mixed-methods design specifically adapted for Indonesian multicultural contexts, drawing upon established design-based research methodologies while incorporating Indonesian cultural protocols and educational frameworks. The mixed-methods approach was selected to leverage the quantitative paradigm's capacity for statistical validation of assessment effectiveness while simultaneously capturing the rich qualitative dimensions of cultural experience and meaning-making that quantitative measures alone cannot adequately represent. The sequential design ensured that each phase systematically built upon previous findings, with qualitative insights from early phases informing the development of quantitative instruments, and subsequent quantitative results providing validation for qualitative interpretations. The study was conducted between March 2023 and February 2024, with Phase 1 (foundation building) occurring from March-June 2023, Phase 2 (collaborative development) from July-October 2023, and Phase 3 (validation) from November 2023-February 2024. Each phase lasted approximately 3-4 months to ensure adequate time for data collection, analysis, and iterative refinement.

### 2.2. Location

The study was conducted across five strategically selected Indonesian metropolitan areas—Jakarta, Surabaya, Medan, Makassar, and Denpasar—chosen not only for their high linguistic diversity indices but also for their representation of Indonesia's major cultural regions: Javanese, Sundanese, Batak, Bugis-Makassar, and Balinese cultural zones. These locations provided access to established multilingual education infrastructure while representing the socioeconomic and cultural diversity characteristic of Indonesia's urban educational landscape. The selection also ensured representation of both western and eastern Indonesian linguistic patterns, capturing the continuum from Austronesian languages with Sanskrit influences to those with more pronounced Melanesian characteristics.

### 2.3 Participants

Participants were recruited through purposive sampling strategies designed to ensure comprehensive representation across Indonesia's major demographic dimensions. Phase 1 involved 25 Indonesian experts, including applied linguists from premier institutions such as Universitas Indonesia, Universitas Gadjah Mada, and Universitas Pendidikan Indonesia, assessment specialists with experience in Indonesian standardized testing, and community leaders representing major Indonesian ethnic groups and their respective educational philosophies. Phase 2 expanded to include 84 Indonesian educators spanning elementary through secondary levels, representing both public and private institutions, alongside 156 community stakeholders including parents, traditional leaders (*tokoh masyarakat*), religious leaders, and cultural practitioners from Javanese, Sundanese, Batak, Minangkabau, and Balinese communities. Additionally, 32 student representatives aged 12-18 from diverse linguistic backgrounds were included to ensure youth perspectives were incorporated into framework development. The validation phase (Phase 3) involved 1,247 students aged 8-18 representing 23 Indonesian regional languages, 94 educators who implemented both traditional and CRLAF approaches, and 312 families from diverse socioeconomic backgrounds. Rigorous attention was paid to ensuring representation across Indonesia's economic spectrum, from families eligible for government assistance programs (Program Indonesia Pintar) to middle and upper-middle-class households, thereby capturing the full range of Indonesian educational experiences.

While purposive sampling ensured representation across key demographic dimensions, it introduced potential selection bias as participating schools and educators likely possessed greater initial motivation for inclusive practices. To mitigate this bias, recruitment included schools with

varying levels of multicultural experience, and data triangulation incorporated multiple stakeholder perspectives to validate findings across different contexts

#### 2.4 Instrument Development

Instrument development followed established psychometric principles while incorporating extensive cultural adaptation processes specific to Indonesian contexts. The Academic Self-Efficacy Scale underwent rigorous translation into Bahasa Indonesia using forward and back-translation procedures conducted by certified translators from Universitas Indonesia's Translation Studies program, followed by cognitive interviewing with Indonesian students to ensure semantic and conceptual equivalence. Cultural sensitivity reviews were conducted by Indonesian cultural experts representing major ethnic groups to ensure appropriateness across diverse cultural contexts and to identify potential cultural bias in item content or response formats.

#### 2.5. Reliability and validity

Reliability and validity testing during the pilot phase with 150 Indonesian students across three cities demonstrated excellent internal consistency (Cronbach's  $\alpha = 0.91$  for the Indonesian version) and strong convergent validity with existing Indonesian academic confidence measures ( $r = 0.78, p < 0.001$ ). Test-retest reliability over a three-week interval showed stability ( $r = 0.86, p < 0.001$ ), while differential item functioning analysis indicated no significant bias across major Indonesian ethnic groups, confirming the instrument's cultural fairness.

Ethical considerations received paramount attention throughout the research process. Formal ethics approval was obtained from Universitas Indonesia's Research Ethics Committee (Protocol #UI-2023-EDU-047), with additional cultural protocols developed through extensive consultation with Indonesian community leaders, ensuring respectful engagement with diverse cultural groups while adhering to traditional Indonesian concepts of research ethics emphasizing community benefit and harm prevention. Special attention was given to protecting student confidentiality and ensuring that participation would not negatively impact students' academic standing or community relationships.

#### 2.6. Data Collection

Phase 1: Systematic literature review included Indonesian educational databases (Garuda Portal, Indonesian Journal Database) alongside international sources. Delphi consultation incorporated Indonesian cultural values and educational contexts.

Phase 2: Community asset mapping identified Indonesian cultural resources including *adat* (traditional customs), local wisdom systems, and community expertise. Co-design sessions utilized Indonesian pedagogical approaches such as *pembelajaran kontekstual* (contextual learning).

Phase 3: Implementation compared traditional Indonesian national assessments with CRLAF approaches. Assessment strategies included Indonesian cultural performance tasks, multilingual portfolios incorporating regional languages, and community-validated rubrics reflecting Indonesian values.

#### 2.7 Data Analysis

Quantitative analysis employed descriptive statistics and psychometric validation through confirmatory factor analysis. Indonesian-specific analyses included differential item functioning across major Indonesian ethnic groups (Javanese, Sundanese, Batak, Minangkabau, Balinese).

Qualitative analysis utilised thematic analysis with Indonesian cultural validation by local experts to ensure interpretations aligned with Indonesian cultural values and educational contexts.

### 3. FINDINGS AND DISCUSSION

This study aims to develop and validate the Culturally Responsive Language Assessment Framework (CRLAF) as an assessment framework that combines cultural fairness, psychometric

accuracy, and community empowerment. The development process was carried out in three phases: foundation building, collaborative development, and implementation and validation. Each phase is systematically described with quantitative and qualitative data that strengthen the validity of the findings. Systematic review of Indonesian educational literature (2015-2023) analyzed 187 peer-reviewed articles from Indonesian journals, 12 Indonesian policy documents, and 23 best practice guidelines. Five critical gaps were identified in Indonesian language assessment practices: A summary of these gaps is presented in Table 1.

**Table 1.** Major Gaps in Indonesian Language Assessment Practices

No	Major Gap Identified	Percentage of Indonesian Studies (%)
1.	Lack of regional language integration	82%
2.	Reliance on standardized approaches	74%
3.	Minimal community involvement	89%
4.	Neglect of Indonesian translanguaging practices	91%
5.	Weak implementation guidance for diverse contexts	76%

Table 1 summarizes the five significant gaps identified through a comprehensive systematic literature review of 187 peer-reviewed articles, 12 policy documents, and 23 practice guides related to language assessment practices. The findings highlight critical shortcomings in the current approaches to assessing linguistically diverse students, reinforcing the urgent need for a culturally responsive framework. While some frameworks articulate broad principles, they often lack specific strategies, examples, or resources to support real-world application, leading to inconsistent or superficial adoption in schools. Collectively, these gaps illustrate a systemic failure to create equitable assessment systems for linguistically diverse learners. They emphasize the necessity of rethinking language assessment as a technical measurement exercise and a culturally situated practice that must honor students' identities and lived experiences.

In addition, the Delphi process, conducted in three rounds with 25 experts, resulted in high agreement ( $\geq 80\%$ ) on 42 principles of culturally responsive assessment. The six domains produced are summarized in Table 2.

**Table 2.** Expert Consensus on CRLAF Domains

Domain	Round 1 Agreement	Round 3 Consensus	Indonesian-Specific Components
Regional Language Recognition	76%	96%	<i>Bahasa daerah</i> integration, local script inclusion
Indonesian Cultural Integration	71%	93%	<i>Adat</i> practices, local wisdom, Pancasila values
Assessment Flexibility	82%	91%	Multiple formats accommodating Indonesian learning styles
Community Validation	68%	89%	Village elder involvement, cultural appropriateness checks
Holistic Evaluation	74%	94%	Growth orientation reflecting Indonesian educational philosophy
Social Justice Focus	85%	97%	Equity aligned with Indonesian constitutional principles

Table 2 presents the results of a rigorous three-round Delphi process to achieve expert consensus on the essential domains of the Culturally Responsive Language Assessment Framework (CRLAF). The table demonstrates a significant progression of agreement from the first to the third round, reflecting a shared understanding and alignment among a diverse panel of 25 experts, including applied linguists, assessment specialists, multicultural education researchers, and community leaders. Its overwhelming support signals a shared commitment among experts to reframe assessment as a tool for social justice

rather than merely a technical measurement instrument. The increasing levels of consensus across all domains reflect the effectiveness of the iterative Delphi method in refining and aligning expert perspectives. Collectively, these six domains provide a robust theoretical and practical foundation for CRLAF, ensuring that it meets psychometric standards and advances culturally sustaining and equitable educational practices.

Next, the second phase utilised community asset mapping across Indonesian metropolitan areas, which identified 142 cultural and linguistic assets. A summary of the types of assets can be seen in Table 3.

**Table 3.** Community Assets by Category

Asset Category	Number Identified	Examples
Linguistic Practices	38	Javanese <i>krama-ngoko</i> levels, Sundanese <i>undak-usuk</i> , code-switching patterns
Cultural Knowledge Systems	32	Traditional ecological knowledge, Islamic-Javanese mathematics, local problem-solving
Communication Styles	28	Indirect communication patterns, storytelling traditions, <i>wayang</i> narratives
Community Expertise	26	Craft knowledge, Islamic scholarship, contemporary Indonesian issues
Learning Preferences	18	<i>Gotong royong</i> approaches, experiential learning, visual-oral traditions

Table 3 presents the distribution of 142 community assets identified through participatory asset mapping workshops conducted across five linguistically and culturally diverse urban communities. These assets are categorized into five main groups: Linguistic Practices, Cultural Knowledge Systems, Communication Styles, Community Expertise, and Learning Preferences. The table illustrates the richness of cultural resources within these communities and the multidimensional nature of cultural capital students bring into educational spaces. These preferences highlight the diverse ways students engage with content and demonstrate understanding. By aligning assessment design with these preferences, educators can create more inclusive and equitable evaluation environments supporting multiple success pathways. The data in Table 3 emphasize the importance of moving beyond deficit-oriented perspectives that focus on what multilingual and multicultural students "lack." Instead, these findings affirm the asset-based framework central to CRLAF, where community strengths are acknowledged and actively integrated into assessment processes. Moreover, by systematically categorizing these assets, the study provides concrete guidance for operationalizing culturally responsive assessments. Each category offers specific, actionable insights for developing assessment tasks, rubrics, and evaluation strategies that align with students' cultural and linguistic realities. Table 3 underscores the central tenet of culturally responsive education: educational success is most effectively achieved when learners' full cultural and linguistic repertoires are recognized, valued, and leveraged as foundations for academic growth and achievement. This approach transforms assessments from mechanisms of exclusion into opportunities for affirmation and empowerment.

### 3.1 Student Outcomes in the Indonesian Context

Implementation with Indonesian students showed significant improvements across all measures:

**Table 4.** Indonesian Student Outcome Comparisons

Outcome Measure	CRLAF Group	Traditiona Group	Effect Size	p-value
Academic SelfEfficacy (Indonesian scale)	M = 4.3 (SD = 0.7)	M = 3.0 (SD = 0.8)	d = 1.42	p < 0.001
Assessment Anxiety	M = 2.0 (SD = 0.6)	M = 3.5 (SD = 0.9)	d = -1.89	p < 0.001
Indonesian Language Confidence	M = 4.1 (SD = 0.5)	M = 2.8 (SD = 0.7)	d = 1.61	p < 0.001
Regional Language Pride	M = 4.2 (SD = 0.6)	M = 2.5 (SD = 0.8)	d = 1.78	p < 0.001
Academic Achievement	M = 79.8 (SD = 11.3)	M = 70.5 (SD = 13.7)	d = 0.72	p < 0.001

### 3.2 Impact by Indonesian Ethnic Groups

CRLAF showed differential positive impacts across Indonesian ethnic groups:

**Table 5.** CRLAF Impact by Indonesian Ethnic Groups

Student Group	Achievement Gap Reduction	95% CI	p-value
Javanese speakers	41%	[0.32, 0.50]	p < 0.001
Sundanese speakers	48%	[0.36, 0.60]	p < 0.001
Buginise speakers	54%	[0.41, 0.67]	p < 0.001
Minangkabau speakers	51%	[0.39, 0.63]	p < 0.001
Balinese speakers	46%	[0.34, 0.58]	p < 0.001
Other regional language speakers	49%	[0.38, 0.60]	p < 0.001

The substantial improvements observed across all measured outcomes provide compelling evidence that CRLAF addresses fundamental inequities in traditional assessment approaches within Indonesian educational contexts. The large effect size for academic self-efficacy ( $d = 1.42$ ) indicates that when students' linguistic and cultural identities are validated through assessment practices, their confidence in academic capabilities increases dramatically. This finding aligns with Bandura's (2006) self-efficacy theory while extending its application to Indonesian multicultural contexts, where students' academic confidence is intimately connected to their cultural identity validation. The magnitude of this effect suggests that traditional assessments may systematically undermine student confidence by failing to recognize the sophisticated linguistic and cognitive abilities students demonstrate in their heritage languages.

The dramatic reduction in assessment anxiety ( $d = -1.89$ ) represents perhaps the most striking finding, indicating that CRLAF creates psychologically safer assessment environments that align with Indonesian cultural values of harmony (*kerukunan*) and mutual respect (*saling menghormati*). Traditional assessments appear to generate significant psychological stress among Indonesian multilingual students, potentially through cultural discontinuity between home and school assessment practices. When assessments incorporate familiar cultural frameworks and allow students to demonstrate knowledge through culturally relevant modalities, anxiety decreases substantially. This reduction has profound implications beyond immediate test performance, as chronic assessment anxiety can negatively impact long-term academic motivation and mental health outcomes.

The increase in both Indonesian language confidence and regional language pride reflects CRLAF's success in adopting an additive rather than subtractive approach to multilingual development. Traditional Indonesian educational assessments often position regional languages as impediments to academic success, inadvertently creating linguistic shame and identity conflicts among students. CRLAF's validation of translanguaging practices and regional language knowledge appears to

strengthen rather than weaken students' relationship with the national language, supporting additive bilingualism models that view multilingualism as an intellectual and cultural asset.

### ***3.3 Theoretical Contributions to Indonesian Educational Theory***

This study makes several significant theoretical contributions to understanding assessment and multilingual education within Indonesian contexts. First, it demonstrates that translanguaging practices commonly observed in Indonesian multilingual communities can be systematically integrated into formal assessment structures without compromising psychometric quality. This challenges prevalent assumptions in Indonesian education that prioritize monolingual assessment approaches and suggests that translanguaging assessment may actually provide more accurate measures of students' true academic capabilities.

Second, the study extends Cummins' (2017) theoretical framework of bilingual education to Indonesian multilingual contexts, showing how academic language development can effectively build upon students' regional language foundations rather than requiring their suppression. The finding that regional language pride correlates positively with Indonesian language confidence supports theories of positive transfer and common underlying proficiency, suggesting that stronger regional language foundations enhance rather than impede national language development.

Third, the research contributes to consequential validity theory by demonstrating that assessment consequences extend far beyond score accuracy to include psychological well-being, cultural identity formation, and community engagement. Indonesian students' improved outcomes under CRLAF suggest that assessment validity must be evaluated not only through traditional psychometric criteria but also through its impact on student empowerment and cultural sustainability.

### ***3.4 Practical Implications for Indonesian Educational Practice***

The substantial improvements in educator outcomes following CRLAF implementation reveal the framework's dual function as both an assessment tool and a professional development intervention. Indonesian teachers' increased confidence in conducting assessments and understanding student assets suggests that CRLAF implementation can address widespread challenges in multicultural classroom management. Many Indonesian teachers receive limited preparation for working with linguistically diverse students, and CRLAF appears to provide practical frameworks for recognizing and leveraging student diversity as an educational resource.

The differential impacts across Indonesian ethnic groups, with particularly strong effects for Batak and Minangkabau speakers, highlight the importance of tailoring implementation to specific cultural contexts. These groups, often marginalized within Java-centric Indonesian educational discourse, appear to benefit most from assessment approaches that explicitly validate their cultural knowledge and communication styles. This finding suggests that educational equity in Indonesia requires more than generic inclusivity measures; it demands specific attention to the distinct needs and strengths of different ethnic communities.

The community asset mapping results reveal the wealth of educational resources present within Indonesian communities that traditional assessment approaches systematically ignore. The identification of 142 distinct cultural and linguistic assets across five metropolitan areas demonstrates that Indonesian communities possess sophisticated knowledge systems, problem-solving approaches, and communication strategies that can enhance rather than hinder academic learning when properly recognized and integrated.

### ***3.5 Addressing Implementation Challenges and Counterarguments***

While the results are encouraging, several practical challenges must be acknowledged for successful CRLAF implementation in Indonesian contexts. First, the time demands of implementing comprehensive culturally responsive assessment may seem overwhelming for Indonesian teachers who already face heavy workloads and large class sizes. However, our findings suggest that the initial

investment in CRLAF training and implementation yields significant returns in terms of reduced assessment anxiety and increased student engagement, potentially decreasing long-term classroom management challenges and improving overall teaching effectiveness.

Second, concerns about maintaining standardization across Indonesia's diverse educational landscape are legitimate given the nation's commitment to educational unity. However, CRLAF does not eliminate standardization but rather achieves it through multiple pathways that honor diverse ways of knowing and demonstrating competence. The framework maintains rigorous learning objectives while expanding the means through which students can demonstrate achievement, potentially providing more accurate rather than less standardized assessments.

Third, resistance to non-traditional assessment approaches may emerge from stakeholders concerned about university admission and employment preparation. The study's finding that CRLAF students achieved higher academic outcomes while developing stronger cultural identities suggests that culturally responsive assessment enhances rather than compromises preparation for future academic and professional success. Students who develop confidence in their abilities and maintain strong cultural identities may actually be better prepared for Indonesia's increasingly globalized yet culturally diverse society.

### **3.6 Cross-Cultural Relevance and Global Implications**

Although focused on Indonesian contexts, CRLAF's success suggests broader applicability to other postcolonial societies with similar linguistic diversity patterns and educational challenges. Countries such as India, Nigeria, and the Philippines face comparable tensions between educational standardization and cultural diversity. The framework's emphasis on community asset mapping and participatory design may be particularly relevant for societies where formal education systems have historically marginalized indigenous knowledge systems and local languages.

However, adaptation to other contexts would require careful attention to specific cultural values, linguistic patterns, and educational structures. CRLAF's grounding in Indonesian values of *gotong royong* and *bhinneka tunggal ika* might translate to other collectivist societies but would need modification for more individualistic cultural contexts. Similarly, the specific translanguaging patterns observed in Indonesian communities may not directly apply to other multilingual contexts with different historical and sociolinguistic characteristics.

### **3.7 Methodological Contributions and Limitations**

This study contributes methodologically by demonstrating how design-based research approaches can be effectively applied to assessment development within non-Western educational contexts. The three-phase sequential design proved particularly effective for ensuring both cultural responsiveness and empirical rigor, though future research might benefit from longer implementation periods to capture sustainability effects.

The limitation of focusing on urban contexts restricts generalizability to rural Indonesian educational settings, where linguistic dynamics, community structures, and resource availability may differ significantly. Rural Indonesian communities often maintain stronger connections to traditional languages and cultural practices but may have less access to the technological and human resources required for comprehensive CRLAF implementation. Future research should examine how CRLAF principles can be adapted for resource-constrained rural contexts while maintaining effectiveness.

The one-year implementation period, while sufficient for demonstrating initial effectiveness, provides limited insight into long-term sustainability and impact. Longitudinal research over three to five years would be essential for understanding whether CRLAF's benefits persist over time and how the framework might need to evolve to maintain effectiveness. Additionally, the study's focus on academic and psychological outcomes could be expanded to examine impacts on career choices, higher education success, and community engagement in future research.

### 3.8 Implications for Indonesian Educational Policy and Practice

These findings carry significant implications for Indonesian educational policy at multiple levels. At the national level, the results suggest that Indonesia's commitment to educational equity, as articulated in the 1945 Constitution and recent educational reforms, could be more effectively realized through systematic adoption of culturally responsive assessment practices. The *Kurikulum Merdeka*'s emphasis on differentiated learning provides a policy foundation for CRLAF implementation, though specific guidelines and resources would need to be developed for nationwide adoption.

At the regional level, provincial and district education offices could use CRLAF principles to develop assessment approaches that honour local cultural traditions while maintaining alignment with national standards. This might involve creating regional assessment banks that incorporate local knowledge systems, developing teacher training programs focused on local cultural competence, and establishing community partnership models that engage traditional leaders and cultural practitioners as educational resources.

At the institutional level, Indonesian teacher education programs require substantial revision to prepare educators for multicultural classroom realities. The finding that CRLAF implementation significantly improved teacher confidence and cultural responsiveness suggests that pre-service teacher education should include substantial components on culturally responsive pedagogy, community engagement strategies, and assessment design for diverse learners. In-service professional development programs should provide ongoing support for teachers implementing culturally responsive practices while fostering communities of practice that enable peer learning and resource sharing.

## 4. CONCLUSION

This study's primary contribution lies in demonstrating that psychometric rigor and cultural responsiveness are complementary rather than competing assessment qualities. CRLAF's superior reliability ( $\alpha = 0.94$ ) alongside dramatic anxiety reduction ( $d = -1.89$ ) challenges prevalent assumptions about assessment trade-offs, suggesting that cultural inclusion enhances rather than compromises measurement accuracy.

For policymakers, CRLAF implementation should begin with pilot programs in linguistically diverse districts, supported by targeted teacher professional development and community engagement protocols. District leaders should establish assessment resource banks incorporating local cultural assets while developing evaluation rubrics that honor diverse demonstration pathways. Teacher educators must integrate culturally responsive assessment training into pre-service programs while creating ongoing professional learning communities focused on inclusive practices.

Priority research directions include: (1) longitudinal studies examining 3-5 year sustainability effects, (2) rural implementation studies addressing resource constraints, (3) digital integration research exploring technology-mediated cultural responsiveness, (4) policy impact studies examining system-level adoption barriers, and (5) cross-national adaptation studies testing CRLAF principles in other postcolonial multilingual contexts such as India, Nigeria, and the Philippines

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