Pedagogy Review

ISSN: 3025-6771 | Journal's DOI: 10.61436/pedrev

Homepage: https://imrecsjournal.com/journals/index.php/pedrev

Developing and Validating the Glocal Competency Scale for Primary School Teachers to Adapt Global Standards to Indonesian Local Contexts

Annas Solihin[1], Neni Mariana[1,*], Suryanti[1], Ganes Gunansyah[1], Ika Rahmawati[1], Yunia Tiara Riski[2]

[1] Department of Primary Education, Universitas Negeri Surabaya, Indonesia

[2]Indonesian School of Davao, Philippines

ARTICLE INFO

Article History:

Received: 11 March 2026

Accepted: 14 May 2026

Published: 08 June 2026

Keywords:

Glocal competency;
Primary school teachers;
Instrument development;
Global citizenship education;
Cultural adaptation.

Corresponding Author:

nenimariana@unesa.ac.id

ABSTRACT

This research develops and preliminarily validates the Glocal Competency Scale for Primary School Teachers (GCS-PST), an instrument designed to measure the capacity of Indonesian primary school teachers to translate globalized curriculum standards into glocalized values within local cultural contexts. The widespread influence of global educational frameworks such as Global Citizenship Education (GCE) and Education for Sustainable Development (ESD) requires teachers to contextualize international standards within culturally specific local settings. Existing teacher competency instruments address either global or local dimensions in isolation, producing a measurement gap for the integrated glocal competency construct. To address this gap, the study employed a Research and Development (R&D) paradigm across four systematic stages: (1) comprehensive literature review, (2) item development based on five theoretically grounded dimensions, (3) expert judgment using Content Validity Index (CVI) calculations, and (4) field-testing combined with in-depth qualitative exploration involving 30 primary school teachers. This study adopted an Explanatory Mixed-Methods design: quantitative descriptive data from scale responses were explained and enriched by open-ended responses, interviews, and direct observations from the same 30 participants. Content validity was evaluated using CVI calculations, while reliability was assessed using Cronbach's alpha and McDonald's omega. Results demonstrate acceptable preliminary psychometric properties with overall reliability coefficients of $\alpha = 0.87$ and $\omega = 0.89$. Descriptive analysis shows that participants exhibited moderate to high levels of glocal competency across all five dimensions. Qualitative findings further illuminate how teachers perceive and enact glocal competency in their daily practice. The five-dimensional structure encompasses Situated Global Practice, Glocal Curriculum Design, Critical-Cultural Awareness, Local Cultural Awareness and Expression, and Intercultural Collaboration and Digital Mediation.

To cite this article:

Solihin et al. (2026). Developing and Validating the Glocal Competency Scale for Primary School Teachers to Adapt Global Standards to Indonesian Local Contexts. *Pedagogy Review*, *5*(1), 74-84. doi: https://doi.org/10.61436/pedrev/v5i1.pp74-84

■ INTRODUCTION

The increasing globalization of education presents both opportunities and challenges to primary school teachers worldwide. In Indonesia, teachers encounter pedagogical difficulties when they need to bridge the gap between frequently changing global curriculum frameworks, such as Global Citizenship Education (GCE), Education for Sustainable Development (ESD), digital literacy standards, and the local curriculum, which continues to evolve in response to global influences (Bosire et al., 2025; van Werven et al., 2023). This tension between global and local forces has been conceptualized by Robertson (2000) and Roudometof (2016) as glocalization, a concept that captures the simultaneous homogenization and diversification of modern educational systems.

In the primary education arena, glocalization is reflected in teachers' abilities to contextualize globally mandated instructional content within students' lived experiences, social and cultural backgrounds, and community values. This ability, referred to as glocal competency, has become increasingly relevant to Indonesia's implementation of the *Kurikulum Merdeka* (Independent Curriculum),

which emphasizes local wisdom while aligning itself with international standards (Aliyyah et al., 2023). Despite the importance of understanding glocal competencies in teaching, measurement tools for this construct remain limited, particularly in developing countries.

A systematic examination of the existing literature reveals that prior research on teacher competencies has focused predominantly on either global competencies (Kerkhoff & Cloud, 2020; van Werven et al., 2023) or local cultural competencies (Shih, 2022; Suri & Chandra, 2021). Instruments that explicitly measure the integrated capacity to adapt global curriculum standards to local cultural contexts are conspicuously absent. Kerkhoff and Cloud (2020) developed the Global Teaching Model with four dimensions: situated practices, integrated global learning, critical-cultural awareness, and intercultural collaboration. Their Teaching for Global Readiness Scale demonstrated strong reliability (Cronbach's alpha = 0.88) and construct validity (CFI = 0.96). However, it was designed for Western educational contexts and does not include local cultural preservation as a measurable dimension. van Werven et al. (2023) identified global teaching competencies for primary education through a Delphi study, encompassing foundational knowledge, facilitation skills, and curriculum design for Global Citizenship Education. Similarly, they did not address how educators in non-Western settings operationalize these competencies while honoring culturally specific local realities. Parmigiani et al. (2022) developed rubrics for global competence in teacher education programs, and Dong et al. (2025) constructed an assessment tool for teacher leadership in multicultural settings in Xinjiang, China. Fan et al. (2025) designed a Local Cultural Awareness Index for EFL learners. None of these instruments, however, explicitly measures the integration of global standard adaptation with local cultural context within primary education in non-Western developing countries. This evidential gap—not merely asserted but demonstrated through the foregoing review—constitutes the primary justification for the present study.

A theoretical framework for analyzing this complex phenomenon is provided by glocalization, which conceptualizes it as the dynamic interaction between global and local processes. According to Robertson (2000), localization and globalization are components of the same overarching process rather than opposing forces. Roudometof (2016) extends these conceptualizations by distinguishing glocalization as a process, glocality as a state, and glocalism as an ideology. When applied to teacher education, this framework underscores that glocal competency involves not only global content knowledge and appreciation of local culture, but also the active interpretation and transformation of global educational developments through local cultural dimensions (Pineda et al., 2024). Pineda et al. (2024), in their cross-cultural study of CLIL teachers in Taiwan and Spain, found that training needs vary significantly across contexts, demonstrating the necessity of glocalizing teacher professional development programs.

Empirical studies examining teachers' challenges in implementing globally oriented curricula in local contexts reveal consistent patterns. Keogh et al. (2018) identified in their multi-country study of Ghana, Kenya, Peru, and Guatemala that one-size-fits-all curricula with minimal local adaptation, low stakeholder participation, and inadequately prepared teachers represent major barriers to effective implementation. These results are consistent with a study conducted in Qatar by Hamwy et al. (2023), which found that more than half of teachers encountered moderate-to-severe difficulties when teaching the Sustainable Development Goals and Global Citizenship Education. These challenges included a lack of training, an inadequate understanding of the SDGs, inadequate facilities, and difficulties in evaluating global competencies. While secondary teachers in Rwanda valued global education, Bosire et al. (2025) discovered that they lacked sufficient resources, institutional support, ongoing training, and pedagogical skills for intercultural teaching.

The development of valid and reliable instruments to measure teacher competencies has been recognized as essential for both research and practice. Recent scholarship on instrument development demonstrates increasingly sophisticated approaches that integrate psychometric testing, expert validation, and theoretical framework synthesis. Aydin, Yildirim, and Kus (2024) constructed a 36-item Teachers' Digital Competences Scale using Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA), reporting excellent model fit indices and strong reliability coefficients (Cronbach's alpha = 0.89, McDonald's omega = 0.91). Tzafilkou, Perifanou, and Economides (2023) developed and validated a 20-item digital competency instrument for teachers using partial least squares structural equation modeling. Astorga & González-Carrasco (2025) presented a rigorous sequential validation process for assessing teachers' professional

competencies, emphasizing content validity through expert judgment, pilot testing, and confirmatory factor analysis.

Several studies have attempted to measure competencies related to glocal teaching, though their focus varies across contexts and constructs. For instance, Parmigiani et al. (2022) developed a set of rubrics to assess global competence in teacher education programs using a modified Delphi method involving 31 international experts across five rounds. Their work produced validated assessment tools that capture key dimensions of global competence, including dispositions, knowledge, and skills. Similarly, Fan, Cheng, and Yan (2025) designed a Local Cultural Awareness Index for English as a Foreign Language learners by combining the Delphi method with the Analytic Hierarchy Process. Their instrument demonstrates a practical way to operationalize the balance between appreciation of local culture and openness to global perspectives. In another context, Dong et al. (2025) developed an assessment tool for teacher leadership in multicultural settings in Xinjiang, China. Their framework emphasizes cross-cultural ICT-based teaching competence as well as the ability to preserve local cultural heritage while engaging with global viewpoints. Despite these contributions, existing instruments do not explicitly measure teachers' integrated capacity to adapt global curriculum standards to local cultural contexts, particularly in primary education settings (Chandir & Blackmore, 2024).

The existing teacher competency assessments in Indonesia focus on four standard competencies: pedagogical, professional, social, and personality (Kartowagiran et al., 2020). Daga, Wahyudin, and Susilana (2023) mapped these competencies across 1,281 students and found significant variations by region, school accreditation, and school status, highlighting the need for context-responsive competency frameworks. However, their study did not address the specific capacity to integrate global and local dimensions in teaching practice. Similarly, while Eliyawati et al. (2023) developed an instrument to assess science teachers' competency to teach Education for Sustainable Development in Indonesia, drawing on various national and international frameworks, the instrument focused on environmental education rather than the broader glocal competency construct.

Theoretical frameworks emphasize the importance of teachers developing what Bümen and Holmqvist (2022) call sense-making capacity to adapt curricula. Their comparative study of Turkish and Swedish teachers revealed that even in centralized curriculum systems, teachers engage in expansion, revision, and deletion of curriculum content to meet local needs. However, this adaptation requires specific competencies that are not systematically assessed. Wang, Nokkala, and Moate (2024) compared Finnish and Chinese teacher competency frameworks, finding that while both emphasize pedagogy, technology, and reflection, they differ in their focus on ethical dimensions and adaptive teaching, suggesting that competency frameworks must reflect both global educational trends and national cultural values.

The integration of local cultural awareness into teaching practice has been demonstrated in several contexts. Suri and Chandra (2021) documented how early childhood teachers in Indonesia use contribution, enrichment, transformation, and problem-based learning strategies to integrate local cultural values and multicultural education. Shih (2022) developed a preschool local-culture curriculum in Taiwan that used local markets and community resources as learning contexts, demonstrating how culturally responsive education can cultivate young children's cultural identities. Lee, Shiyama, and Shafeeqa (2026) employed a dialogic approach to environmental literacy and global citizenship education in primary schools in the Maldives and England, showing how local environmental concerns can be connected to global sustainability challenges. These studies illustrate practical manifestations of glocal teaching but lack validated instruments to measure the underlying competencies.

Based on a synthesis of theoretical frameworks (Kerkhoff & Cloud, 2020; Robertson, 2000; Roudometof, 2016; van Werven et al., 2023) and empirical challenges identified in implementation studies (Bosire et al., 2025; Hamwy et al., 2023; Keogh et al., 2018), this study proposes that glocal competency comprises five dimensions: (1) Situated Global Practice, which reflects teachers' ability to contextualize global educational concepts within local settings; (2) Glocal Curriculum Design, encompassing skills in adapting global curriculum frameworks to local contexts; (3) Critical-Cultural Awareness, representing the capacity to critically evaluate both global innovations and local practices; (4) Local Cultural Awareness and Expression, capturing knowledge and valuing of local cultural heritage; and (5) Intercultural Collaboration and Digital Mediation, involving skills in facilitating cross-cultural interactions

through digital platforms.

The absence of a validated instrument specifically targeting glocal competency has concrete operational consequences for teacher evaluation under Indonesia's *Kurikulum Merdeka*. The *Kurikulum Merdeka* requires teachers to exercise substantial pedagogical autonomy in adapting national and global curriculum frameworks to the specific cultural, linguistic, and community contexts of their students. Without a psychometrically validated instrument, school supervisors, district education offices, and professional development coordinators lack empirical tools to diagnose specific competency deficits, design targeted interventions, or evaluate the effectiveness of training programs that address the global-local integration dimension of teaching practice. This measurement gap is not merely theoretical; it directly impairs schools' capacity to identify which teachers require support in contextualizing curriculum content and which can serve as mentors to colleagues. The GCS-PST directly addresses this evaluative deficiency by providing a domain-specific, psychometrically grounded assessment tool for the glocal dimension of teaching competence that is absent from current national teacher assessment frameworks.

This study aims to develop and conduct a preliminary validation of the Glocal Competency Scale for Primary School Teachers (GCS-PST). Three research questions guide this investigation: (RQ1) How can a theoretically grounded and contextually appropriate instrument for measuring glocal competency among Indonesian primary school teachers be systematically developed? (RQ2) What preliminary evidence of content validity can be established for the GCS-PST through expert judgment and CVI analysis? (RQ3) To what extent does the GCS-PST demonstrate acceptable preliminary reliability based on Cronbach's alpha and McDonald's omega in a pilot sample?

■ METHOD

Research Design

This study employed a Research and Development (R&D) approach combined with an Explanatory Mixed-Methods design. This design was selected because quantitative data from scale responses require further explanation and enrichment through qualitative data gathered from open-ended responses, interviews, and direct observations from the same participants (Astorga & González-Carrasco, 2025; Aydin et al., 2024). The instrument development process consisted of four major phases conducted between September 2024 and February 2025. Phase 1 involved synthesizing a comprehensive theoretical framework through a literature review of glocalization theory, global teacher competency models, and implementation challenges. Phase 2 comprised item generation and expert validation using Content Validity Index (CVI) calculations. Phase 3 included pilot testing with item refinement based on corrected item-total correlations. Phase 4 consisted of main field testing that combined quantitative descriptive measurement with qualitative exploration from 30 participants through open-ended responses, brief interviews, and classroom observations.

Participants

The main field testing involved 30 doctoral students enrolled in the Glocalization of Primary Education Practice course (*Glokalisasi Praktik Pendidikan Dasar*) in the Doctoral Program in Primary Education (*S3 Pendidikan Dasar*) at Universitas Negeri Surabaya. All participants are currently serving as active primary school teachers while pursuing doctoral degrees, making them a population with concurrent theoretical training in glocalization and direct classroom experience. Participants were selected through purposive sampling based on their enrollment in a course explicitly focused on glocalization concepts. Within an Explanatory Mixed-Methods design, a sample of 30 participants is well-suited to generate meaningful quantitative descriptive data alongside rich qualitative data from open-ended responses, interviews, and observations. Teaching experience distribution was as follows: 5 to 10 years (8 teachers), 11 to 15 years (7 teachers), and 16 to 20 years (5 teachers). Geographic representation included teachers from Java (12), Sumatra (3), Kalimantan (2), Sulawesi (2), and Eastern Indonesia (1).

It is important to note that this sample represents a highly specific, academically advanced group whose characteristics differ substantially from those of the broader Indonesian primary school teacher population. All findings should therefore be understood as preliminary evidence describing this participant group, not as generalized psychometric validation. Further validation with a larger and more diverse sample remains necessary in future research.

Research Design and Procedures

The instrument development process began with a comprehensive literature review examining glocalization theory, global teacher competency frameworks, local cultural

competency research, and implementation challenges in developing countries. An initial pool of 42 items was generated, with each item designed to capture specific aspects of the five dimensions. Seven experts rated each item for relevance and clarity on 4-point scales: three curriculum specialists, two psychometric measurement specialists, and two experienced primary school principals. The Content Validity Index (CVI) was calculated as the number of experts rating 3 or 4 divided by the total number of experts. Of the 42 items, seven items received CVI values below the 0.78 threshold and were consequently eliminated, yielding 35 items retained for pilot testing.

The 35-item draft instrument was pilot tested with 30 primary school teachers. Items with corrected item-total correlations below 0.30 were flagged for elimination (Bellini et al., 2019; Sum et al., 2016). Five additional items were eliminated based on statistical criteria and qualitative feedback from participants regarding item clarity and comprehensibility. This elimination process resulted in the final 30-item version of the GCS-PST with six items per dimension.

Cognitive interviewing was conducted during the pilot testing phase to assess how participants interpreted the term "glokal" (glocal) as used in the instrument items. Participants were asked to think aloud as they responded to selected items and to explain, in their own words, what each item meant to them. Analysis of the cognitive interview data revealed that the majority of participants interpreted "glokal" as referring to the integration of global educational values with Indonesian local wisdom (kearifan lokal), consistent with the theoretical construct operationalized in the instrument. Several participants initially associated "glokal" primarily with digital connectivity and international communication; however, after probing, they recognized the local cultural dimension embedded in the items. This finding suggests that while the construct is broadly interpretable by the target population, instrument administrators should provide a brief conceptual orientation to the glocal competency framework prior to administration to ensure consistent interpretation across respondents. The cognitive interviewing data thus provide supplementary evidence of construct validity by confirming that the items function in alignment with their theoretical intent. Data for the main study were collected in January to February 2025 via Google Forms distributed through the course learning management system.

Instruments

The GCS-PST is a 30-item self-report scale organized into five dimensions, each with six items. The instrument employed a 4-point Likert scale (1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree). The decision to use a 4-point scale was made to minimize central tendency bias by requiring respondents to commit to either agreement or disagreement (Nevado-Luna et al., 2025; Tzafilkou et al., 2023). All items were developed and validated in Indonesian.

Data Analysis

Data analysis proceeded in three stages using R version 4.3.2 with the psych and semTools packages. The first stage involved descriptive statistics, including means, standard deviations, and distribution characteristics for all items and dimension scores. Normality was assessed using skewness and kurtosis values, with acceptable ranges of -2 to +2 for skewness and -7 to +7 for kurtosis. The second stage addressed content validity and reliability. Content validity was established through CVI calculations from seven expert raters. Reliability was assessed using Cronbach's alpha, McDonald's omega, and composite reliability (CR). Convergent validity was examined through Average Variance Extracted (AVE, threshold $\geq$ 0.50). The third stage involved qualitative analysis of open-ended responses, interview data, and observational notes from the 30 participants. Qualitative data were used to explain patterns in the quantitative descriptive scores, explore how participants understand and enact glocal competency in their everyday teaching practice, and enrich the overall interpretation of the findings.

■ RESULT AND DISCUSSION

Descriptive Statistics

Table 1 presents descriptive statistics for GCS-PST total and dimension scores. The sample of 30 doctoral students obtained a mean total score of 91.85 (SD = 5.12) out of a possible 120 points, indicating moderate to high levels of glocal competency. The score range from 80 to 102 demonstrates reasonable variability without extreme outliers.

Figure 1 presents a raincloud plot visualization of GCS-PST score distributions across all five dimensions, integrating density curves (half-violin), summary statistics (boxplot), and individual jittered data points into a single unified display. This integrated visualization replaces the previously separate boxplot and violin plot representations, providing a more comprehensive view of score

Table 1. Descriptive statistics for GCS-PST total and dimension scores

Dimension	N	Min	Max	Mean	SD	Skewness
D1: Situated Global Practice	30	14	24	18.65	2.15	-0.37
D2: Glocal Curriculum Design	30	13	23	18.30	2.28	-0.41
D3: Critical-Cultural Awareness	30	13	24	18.55	2.32	-0.28
D4: Local Cultural Awareness	30	14	23	18.60	2.18	-0.33
D5: Intercultural Collaboration	30	12	23	17.75	2.45	-0.45
Total Score	30	80	102	91.85	5.12	-0.31

distributions, including the density shape, the interquartile range, individual response patterns, and potential anomalies. The distributions across all dimensions appear relatively similar, supporting the observation of limited variability between dimensions in this purposively selected sample.

Dimension 1 (Situated Global Practice) achieved the highest mean score (M = 18.65, SD = 2.15). This outcome is attributable to the direct professional experience of participants as active primary school teachers who regularly navigate the challenge of contextualizing curriculum content for specific student communities, a process reinforced by the *Kurikulum Merdeka*'s emphasis on contextual learning (Aliyyah et al., 2023). Dimension 5 (Intercultural Collaboration and Digital Mediation) recorded the lowest mean score (M = 17.75, SD = 2.45), reflecting the practical constraints of limited digital infrastructure and institutional support for cross-cultural collaboration in Indonesian school contexts (Hamwy et al., 2023).

The relatively narrow range of dimension means should be interpreted with caution. Rather than evidence of holistic competency development, this pattern is more likely an artifact of the sample's homogeneity. The negative skewness values across all dimensions (skewness: -0.45 to -0.28; kurtosis: -0.82 to 0.65) reflect a tendency toward higher scores expected given the purposive selection of an educationally advanced sample, and should not be interpreted as indicative of the score distribution in the general teacher population.

Teachers' Perceptions and Enactment of Glocal Competency

As part of the Explanatory Mixed-Methods design, qualitative data were collected through open-ended responses on the instrument sheet, brief interviews, and direct observations of the 30 participants during field testing. These data were used to explain and enrich the quantitative descriptive score patterns obtained from the GCS-PST.

Participants described glocal competency as the ability to integrate global educational values with Indonesian local wisdom (kearifan lokal). Most participants reported that they already adapt curriculum content in their daily teaching, although this is not always done systematically. This finding is consistent with the highest mean score recorded for Dimension 1 (Situated Global Practice, M = 18.65), indicating that participants feel most prepared in contextualizing global educational concepts within the specific cultural realities of their students.

Several participants noted that they face limitations in digital infrastructure and institutional support when attempting to conduct cross-cultural collaboration, particularly through online platforms. This corresponds to the lowest mean score among all

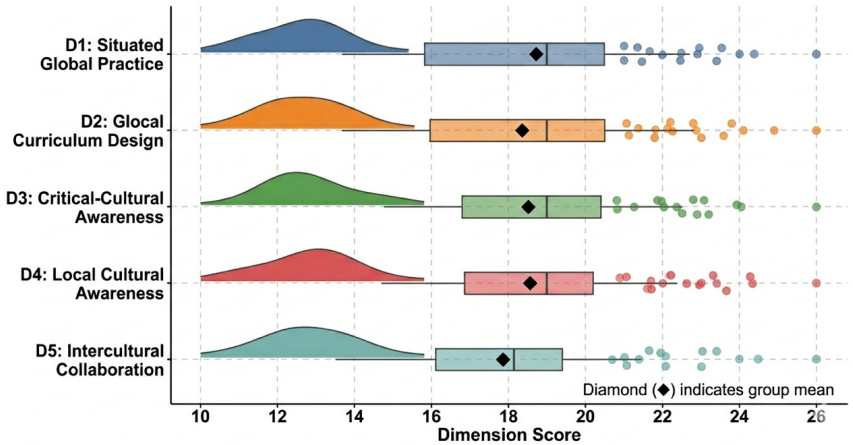

Figure 1. Raincloud Plot of GCS-PST Score Distributions Across Dimensions (N=30)

dimensions for Dimension 5 (Intercultural Collaboration and Digital Mediation, M = 17.75). Participants expressed greater confidence in applying local cultural values in the classroom than in facilitating international collaboration through digital platforms.

Interview findings also revealed that some participants initially associated the term "glocal" primarily with digital connectivity and international communication. After receiving a brief conceptual orientation to the glocal competency framework, these participants were able to recognize the local cultural dimension embedded in the instrument items. This finding reinforces the importance of providing respondents with a short conceptual introduction to the GCS-PST before administering the instrument.

Overall, these qualitative findings support and explain the quantitative descriptive score patterns and provide supplementary evidence that the instrument items function in alignment with their theoretical intent.

Reliability and Internal Consistency

Table 2 presents reliability statistics for each dimension and the overall GCS-PST scale. The overall scale demonstrated strong internal consistency with Cronbach's alpha of 0.87 and McDonald's omega of 0.89. At the dimension level, Cronbach's alpha values ranged from 0.75 to 0.83, all exceeding the 0.70 threshold for acceptable internal consistency. AVE values ranged from 0.50 to 0.57, all meeting the convergent validity threshold. The square roots of AVE (ranging from 0.71 to 0.76) exceeded all inter-dimension correlations (maximum r = 0.68 between D1 and D2), providing preliminary evidence of discriminant validity.

Before interpreting these findings, it is important to establish that the 30 participants in this study are doctoral students enrolled in a specialized glocalization course. This group represents a highly specific and academically advanced sample whose characteristics differ substantially from those of the broader Indonesian primary school teacher population. All findings should therefore be read as preliminary evidence describing the characteristics of this participant group, rather than as definitive psychometric validation evidence. Within an Explanatory Mixed-Methods design, the combination of quantitative descriptive data and qualitative data from 30 participants yields a richer, more grounded understanding of the glocal competency construct than either approach could achieve independently.

Subject to the foregoing consideration, the five-dimensional structure of the GCS-PST provides preliminary support for the operationalization of Roudometof's (2016) theoretical framework. The mapping of dimensions to theoretical constructs is as follows. Dimensions 1 and 2 (Situated Global Practice and Glocal Curriculum Design) operationalize glocalization as an active transformative process: D1 captures the micro-level pedagogical act of translating global content through local contextual lenses within classroom instruction, while D2 captures the meso-level act of restructuring global curriculum frameworks through local cultural knowledge. Dimension 3 (Critical-Cultural Awareness) operationalizes glocality as a cognitive and evaluative condition: the recognition of and reflective engagement with the interpenetration of global and local forces in educational practice. Dimension 4 (Local Cultural Awareness and Expression) operationalizes glocalism as an ideological stance: an explicit commitment to the preservation and transmission of local cultural heritage within global educational contexts. Dimension 5 (Intercultural Collaboration and Digital Mediation) operationalizes the contemporary technological mechanisms through which glocalization is enacted, extending Roudometof's framework to account for digitally mediated educational exchanges.

The strong descriptive scores for Dimension 1 (Situated Global Practice, M = 18.65) reflect Kerkhoff & Cloud's (2020) conceptualization of contextualized teaching as foundational to global competence. These high scores are most plausibly attributed to participants' direct classroom experience as practicing teachers who routinely connect curriculum content to their students' cultural realities, reinforced by the *Kurikulum*

Table 2. Reliability Statistics for GCS-PST Dimensions and Overall Scale

Dimension	Cronbach's α	McDonald's ω	CR	AVE
D1: Situated Global Practice	0.83	0.85	0.84	0.57
D2: Glocal Curriculum Design	0.80	0.82	0.81	0.54
D3: Critical-Cultural Awareness	0.80	0.82	0.81	0.53
D4: Local Cultural Awareness	0.78	0.80	0.79	0.52
D5: Intercultural Collaboration	0.75	0.77	0.76	0.50
Overall Scale	0.87	0.89	0.88	0.55

Merdeka's emphasis on contextual learning (Aliyyah et al., 2023). Qualitative interview data further confirmed that participants consider this dimension the most familiar and regularly practiced aspect of their teaching. This finding is consistent with Lee et al.'s (2026) demonstration that global citizenship education is most effective when teachers employ dialogic approaches that bridge local environmental concerns and global sustainability challenges.

Dimension 2 (Glocal Curriculum Design) operationalizes van Werven et al.'s (2023) identification of curriculum design as a core competency for global citizenship education, while incorporating Bümen & Holmqvist's (2022) insights on teachers' sense-making in curriculum adaptation. The relatively close mean scores between Dimensions 1 and 2 support the proposition that curriculum design and classroom practice represent closely linked facets of glocal teaching. This suggests that professional development programs addressing glocal competency should integrate curriculum adaptation training with practice-based pedagogical training.

Dimension 3 (Critical-Cultural Awareness) addresses concerns raised by Chandir & Blackmore (2024) about standardized global competence metrics that may perpetuate Western cultural assumptions. The relatively high scores on this dimension (M = 18.55) among doctoral participants are plausibly linked to their graduate-level coursework explicitly addressing glocalization as a critical construct, consistent with Pineda et al.'s (2024) finding that critical awareness of global-local tensions is enhanced through targeted professional development.

Dimension 4 (Local Cultural Awareness and Expression) represents a distinct contribution of the GCS-PST relative to Western-developed global competence frameworks. The high mean score (M = 18.60) aligns with Suri & Chandra's (2021) documentation of Indonesian teachers actively integrating local cultural values into their practice, and with Shih's (2022) demonstration of how local-culture curricula cultivate cultural identity in young children. Qualitative responses from participants reinforced this pattern, with many describing concrete examples of how they embed local traditions, languages, and community values into daily learning activities.

Dimension 5 (Intercultural Collaboration and Digital Mediation) yielded the lowest mean scores across all dimensions (M = 17.75) and, based on qualitative interview data, appears to reflect two conceptually distinct sub-competencies: interpersonal intercultural facilitation skills and technical competency in using digital platforms. Participants consistently described feeling less confident in digital-mediated cross-cultural collaboration compared to the other dimensions, citing limited digital infrastructure and insufficient institutional support as the main barriers. This finding aligns with Hamwy et al.'s (2023) documentation of the challenges teachers face in implementing global education frameworks under resource-constrained conditions. Future research with a larger sample should investigate whether these two sub-competencies are better represented as separate dimensions in a revised version of the GCS-PST, thereby improving both the conceptual clarity and the psychometric coherence of the instrument.

The GCS-PST has important practical implications for addressing challenges identified in the literature regarding one-size-fits-all curricula and inadequately prepared teachers (Keogh et al., 2018). The instrument directly supports the implementation of *Kurikulum Merdeka* by providing a domain-specific assessment tool that school supervisors and professional development coordinators can use to diagnose competency profiles and design targeted interventions. Unlike generic global competence assessments, the GCS-PST was developed specifically for Indonesian primary education and incorporates both global and local dimensions, making it particularly relevant for the Indonesian educational context.

■ CONCLUSION

This study developed and conducted a preliminary validation of the Glocal Competency Scale for Primary School Teachers (GCS-PST), a 30-item instrument designed to measure Indonesian primary school teachers' capacity to adapt global curriculum standards to local cultural contexts. This study adopted an Explanatory Mixed-Methods design in which quantitative descriptive data from scale responses were explained and enriched by qualitative data from open-ended responses, interviews, and observations from the same 30 participants. This approach makes a sample of 30 participants appropriate and capable of producing meaningful findings.

Preliminary reliability evidence demonstrated acceptable internal consistency with Cronbach's alpha of 0.87 and McDonald's omega of 0.89. Content validity was established through systematic CVI analysis with seven domain experts. Qualitative findings enriched the interpretation of score patterns by documenting how participants perceive and enact glocal competency in their daily teaching

practice.

These findings must be interpreted within the context of methodological constraints inherent to this study. The GCS-PST should not be applied for national-scale teacher assessment until further validation studies have been conducted with a minimum sample size of 150 to 300 primary school teachers drawn from diverse geographic regions and career stages. Future research should also investigate the potential subdivision of Dimension 5 into Intercultural Facilitation and Digital Mediation sub-constructs, examine relationships between GCS-PST scores and objective teaching practice indicators, and conduct cross-cultural validation in other developing countries facing comparable global-local educational tensions.

Notwithstanding these limitations, the GCS-PST provides a theoretically grounded and contextually appropriate starting point for developing primary school teachers' capacity to implement globally informed and locally responsive pedagogical practices. The instrument directly addresses a gap in the evaluation tools available for implementing *Kurikulum Merdeka* by providing a domain-specific measure of the glocal competency dimension of teaching practice, which is currently absent from national teacher assessment frameworks.

■ DECLARATION OF GENERATIVE AI USAGE IN THE WRITING PROCESS

During the writing of this manuscript, the author(s) employed Claude (Anthropic) to assist with language refinement and improving the clarity of sentence structure. The use of this tool was limited to enhancing readability and grammar. The author(s) have reviewed and edited the content generated by this tool and assume full responsibility for the content of the published article.

■ REFERENCES

Aliyyah, R. R., Rasmitadila, Gunadi, G., Sutisnawati, A., & Febriantina, S. (2023). Perceptions of elementary school teachers towards the implementation of the independent curriculum during the COVID-19 pandemic. *Journal of Education and E-Learning Research*, *10*(2), 154–164. https://doi.org/10.20448/jeelr.v10i2.4490

Astorga, J. M. O., & González-Carrasco, F. (2025). Evaluative Judgment: A Validation Process to Measure Teachers' Professional Competencies in Learning Assessments. *Education Sciences*, *15*(5), 624. https://doi.org/10.3390/educsci15050624

Aydin, M. K., Yildirim, T., & Kus, M. (2024). Teachers' digital competences: a scale construction and validation study. *Frontiers in Psychology*, *15*. https://doi.org/10.3389/fpsyg.2024.1356573

Bellini, D., Crescentini, A., Zanolla, G., Cubico, S., Favretto, G., Faccincani, L., Ardolino, P., & Gianesini, G. (2019). Mathematical Competence Scale (MCS) for Primary School: The Psychometric Properties and the Validation of an Instrument to Enhance the Sustainability of Talents Development through the Numeracy Skills Assessment. *Sustainability*, *11*(9), 2569. https://doi.org/10.3390/su11092569

Bosire, A., Correia, L. G., & Coelho, D. P. (2025). Envisioning Global Education in Rwanda: Contributions from Secondary School Teachers. *Education Sciences*, *15*(5), 619. https://doi.org/10.3390/educsci15050619

Bümen, N. T., & Holmqvist, M. (2022). Teachers' sense-making and adapting of the national curriculum: a multiple case study in Turkish and Swedish contexts. *Journal of Curriculum Studies*, *54*(6), 832–851. https://doi.org/10.1080/00220272.2022.2121178

Chandir, H., & Blackmore, J. (2024). Situated enactments of global competence in three schools in Victoria. *Journal of Education Policy*, *39*(5), 817–837. https://doi.org/10.1080/02680939.2023.2299471

Daga, A. T., Wahyudin, D., & Susilana, R. (2023). Students' Perception of Elementary School Teachers' Competency: Indonesian Education Sustainability. *Sustainability*, *15*(2), 919. https://doi.org/10.3390/su15020919

Dong, J., Chen, X., Chen, C., & Chen, C. (2025). Development and validation of a deep learning–based assessment tool for teacher leadership: A case study from Xinjiang, China. *PLOS One*, *20*(9), e0331560. https://doi.org/10.1371/journal.pone.0331560

Eliyawati, Widodo, A., Kaniawati, I., & Fujii, H. (2023). The Development and Validation of an Instrument for Assessing Science Teacher Competency to Teach ESD. *Sustainability*, *15*(4), 3276. https://doi.org/10.3390/su15043276

Fan, L., Cheng, G., & Yan, N. (2025). Assessing local cultural awareness in university EFL learners: A Delphi and AHP-based index framework. *PLOS One*, *20*(10), e0332233. https://doi.org/10.1371/journal.pone.0332233

Hamwy, N., Bruder, J., Sellami, A., & Romanowski, M. H. (2023). Challenges to Teachers Implementing Sustainable Development Goals Frameworks in Qatar. *Sustainability*, *15*(15), 11479. https://doi.org/10.3390/su151511479

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1–55. https://doi.org/10.1080/10705519909540118

Kartowagiran, B., Suyanta, S., Hamdi, S., Jaedun, A., Ahman, A., Rusijono, R., & Laliyo, L. A. R. (2020). Development of Web-based Application for Teacher Candidate Competence Instruments: Preparing Professional Teachers in the IR 4.0 Era. *European Journal of Educational Research*, *volume-9-2*(volume-9-issue-4-october-2020), 1749–1763. https://doi.org/10.12973/eu-jer.9.4.1749

Keogh, S. C., Stillman, M., Awusabo-Asare, K., Sidze, E., Monzón, A. S., Motta, A., & Leong, E. (2018). Challenges to implementing national comprehensive sexuality education curricula in low- and middle-income countries: Case studies of Ghana, Kenya, Peru and Guatemala. *PLOS ONE*, *13*(7), e0200513. https://doi.org/10.1371/journal.pone.0200513

Kerkhoff, S. N., & Cloud, M. E. (2020). Equipping teachers with globally competent practices: A mixed methods study on integrating global competence and teacher education. *International Journal of Educational Research*, *103*, 101629. https://doi.org/10.1016/j.ijer.2020.101629

Lee, C., Shiyama, A., & Shafeeqa, F. (2026). Our World, Our Futures: A dialogic approach to environmental literacy and global citizenship education in primary schools in the Maldives and England. *British Educational Research Journal*, *52*(1), 180–204. https://doi.org/10.1002/berj.70050

Nevado-Luna, J. M., Valle Díaz, S. Del, Sánchez, F. S., & Rodríguez-Gómez, I. (2025). Key Competences That Allow Excellence in Teaching Practice. *International Journal of Instruction*, *18*(3), 1–18. https://doi.org/10.29333/iji.2025.1831a

Parmigiani, D., Jones, S.-L., Silvaggio, C., Nicchia, E., Ambrosini, A., Pario, M., Pedevilla, A., & Sardi, I. (2022). Assessing Global Competence Within Teacher Education Programs. How to Design and Create a Set of Rubrics With a Modified Delphi Method. *Sage Open*, *12*(4). https://doi.org/10.1177/21582440221128794

Pineda, I., Tsou, W., & Chen, F. (2024). Glocalization in CLIL: analyzing the training needs of in-service CLIL teachers in Taiwan and Spain. *Journal of Multilingual and Multicultural Development*, *45*(7), 2382–2399. https://doi.org/10.1080/01434632.2022.2050380

Robertson, R. (2000). *Globalization: Social Theory and Global Culture*. SAGE Publications Ltd. https://doi.org/10.4135/9781446280447

Roudometof, V. (2016). *Glocalization*. Routledge. https://doi.org/10.4324/9781315858296

Shih, Y.-H. (2022). Designing Culturally Responsive Education Strategies to Cultivate Young Children's Cultural Identities: A Case Study of the Development of a Preschool Local Culture Curriculum. *Children*, *9*(12), 1789. https://doi.org/10.3390/children9121789

Sum, R. K. W., Ha, A. S. C., Cheng, C. F., Chung, P. K., Yiu, K. T. C., Kuo, C. C., Yu, C. K., & Wang, F. J. (2016). Construction and Validation of a Perceived Physical Literacy Instrument for Physical Education Teachers. *PLOS ONE*, *11*(5), e0155610. https://doi.org/10.1371/journal.pone.0155610

Suri, D., & Chandra, D. (2021). Teacher's Strategy for Implementing Multiculturalism Education Based on Local Cultural Values and Character Building for Early Childhood Education. *Journal of Ethnic and Cultural Studies*, *8*(4), 271–285. https://doi.org/10.29333/ejecs/937

Tzafilkou, K., Perifanou, M., & Economides, A. A. (2023). Assessing teachers' digital competence in primary and secondary education: Applying a new instrument to integrate pedagogical and professional elements for digital education. *Education and Information Technologies*, *28*(12), 16017–16040. https://doi.org/10.1007/s10639-023-11848-9

van Werven, I. M., Coelen, R. J., Jansen, E. P. W. A., & Hofman, W. H. A. (2023). Global teaching competencies in primary education. *Compare: A Journal of Comparative and International Education*, *53*(1), 37–54. https://doi.org/10.1080/03057925.2020.1869520

Wang, Y., Nokkala, T., & Moate, J. (2024). Comparing Finnish and Chinese national

teacher education frameworks from the teacher competency perspective. *European Journal of Teacher Education*, 1–20. https://doi.org/10.1080/02619768.2024.2361108