Pedagogical Research
2026, 11(2), em0263
e-ISSN: 2468-4929
https://www.pedagogicalresearch.com

MODESTUM

Research Article

OPEN ACCESS

Decolonizing assessment: Validating a language learning evaluation model based on indigenous philosophy

Sumarno Sumarno [1]*, Agung Prihatmojo [1], Muhammad Fuad [2], Masitoh Masitoh [1], Dewi Ratnaningsih [1]

[1] Universitas Muhammadiyah Kotabumi, INDONESIA
[2] Universitas Lampung, INDONESIA
***Corresponding Author:** sumarno@umko.ac.id

Citation: Sumarno, S., Prihatmojo, A., Fuad, M., Masitoh, M., & Ratnaningsih, D. (2026). Decolonizing assessment: Validating a language learning evaluation model based on indigenous philosophy. *Pedagogical Research, 11*(2), em0263. https://doi.org/10.29333/pr/18552

ARTICLE INFO

Received: 03 Jan 2026

Accepted: 16 Apr 2026

ABSTRACT

This study aimed to develop and empirically validate a language learning evaluation model grounded in indigenous cultural philosophy. The research addressed the limited availability of culturally grounded assessment frameworks by operationalizing the Lampung philosophy of Piil Pesenggiri into measurable constructs representing the Learning Process and Learning Outcomes. A non-experimental cross-sectional design was employed with data collected from 207 eleventh-grade students in North Lampung, Indonesia. The proposed model was tested using Structural Equation Modeling (SEM). The results indicated that the model demonstrated acceptable fit with the empirical data ($p = 0.052$; RMSEA = 0.072; CFI = 0.98; GFI = 0.95). The structural analysis also revealed a strong relationship between the culturally grounded learning process and learning outcomes ($\beta = 0.91$, $p < 0.001$), with the model explaining 83% of the variance in learning outcomes. These findings indicate that indigenous cultural values can be systematically translated into measurable indicators within a language learning evaluation framework. The study provides an empirical example of how culturally grounded assessment models can complement conventional evaluation approaches while reflecting the socio-cultural dimensions of language learning.

Keywords: culturally sustaining pedagogy, language assessment, structural equation modeling, indigenous knowledge, decolonizing education

INTRODUCTION

Globally, education systems are heavily influenced by the standardized testing paradigm. While often justified by the need for quality control and accountability, this approach is widely criticized for its homogenizing effect, promoting a “one-size-fits-all” model that systematically disregards diverse sociocultural contexts (Loeng, 2020). The consequences of this paradigm extend beyond mere curricular constraints (Alhazmi & Kaufmann, 2022). This focus on high-stakes, summative assessments frequently triggers a pervasive “negative washback effect.” Instructional time is often redirected from deep, inquiry-based learning toward narrow test preparation strategies (Al-Kamzari & Alias, 2025). As a result, curricula become increasingly detached from students’ lived realities. The rich “funds of knowledge” that students bring from their homes and communities are often ignored or implicitly devalued. From a decolonial perspective, such assessment regimes may reproduce epistemic hierarchies by privileging dominant cultural and linguistic norms while marginalizing alternative ways of knowing. Students from local communities, linguistic minorities, and non-dominant cultural groups are particularly disadvantaged because assessment tasks often rely on unfamiliar cultural references and discourse patterns. This marginalization of local knowledge systems can create an educational environment that feels alienating and ineffective for many learners (Brondízio et al., 2021).

As a response to these challenges, scholars have increasingly promoted Culturally Sustaining Pedagogy (CSP) (Dunham et al., 2025; Viano & Darling-Aduana, 2025). This approach moves beyond earlier models of cultural relevance by explicitly seeking to sustain linguistic, literate, and cultural pluralism within formal education (Nalipay et al., 2020). Its central premise is that meaningful learning cannot be separated from students’ identities, histories, and sociocultural backgrounds (Ladson-Billings, 2021a). CSP therefore calls for educational practices that not only acknowledge cultural diversity but actively sustain it as a legitimate source of knowledge within the classroom.

However, the advancement of culturally sustaining pedagogies has not been matched by parallel developments in culturally aligned assessment systems. Assessment remains one of the least transformed components within the CSP agenda, despite its central role in defining what counts as legitimate knowledge and academic success (Hanesworth et al., 2019; Walker et al., 2023). The tools used to measure educational outcomes—particularly standardized evaluation frameworks—often fail to align with the

principles of CSP (Flint et al., 2021; Ladson-Billings, 2021b; Paris, 2021). This condition creates a paradoxical situation in which educators may be encouraged to adopt culturally responsive teaching, yet their effectiveness is evaluated through culturally neutralized or decontextualized instruments (da Silva Ale et al., 2025). In language education, this tension becomes especially visible when assessments prioritize discrete linguistic accuracy while overlooking communicative meaning, cultural context, and relational dimensions of language use. Consequently, many evaluation models remain focused on easily quantifiable cognitive outcomes and fail to capture the complex interaction between learning processes, cultural integration, and holistic student development.

These disconnects between empowering pedagogies and reductive assessment systems represents an important research gap. Although the theoretical foundations of culturally responsive and culturally sustaining education have been widely discussed, empirically validated models for evaluating culturally grounded learning remain limited. Several studies have noted that most culturally responsive initiatives primarily focus on instructional strategies, while the design of culturally aligned assessment frameworks remains underdeveloped (Franco et al., 2024; Lawson et al., 2024). Existing studies frequently emphasize pedagogical approaches or qualitative reflections on cultural relevance (Chang & Viesca, 2022; Ladson-Billings, 2021b). Relatively few studies attempt to construct and validate systematic evaluation frameworks capable of measuring such multidimensional learning processes (Evans, 2023; Kushnier et al., 2023). As a result, culturally grounded teaching practices are often difficult to evaluate using conventional assessment systems (Nortvedt et al., 2020; Walker et al., 2023). These systems tend to privilege standardized and decontextualized indicators of achievement. This situation highlights the urgent need for assessment frameworks that are both methodologically rigorous and culturally grounded, allowing educational evaluation to reflect diverse epistemologies and learning experiences.

This study addresses this challenge by developing and validating a comprehensive evaluation model for language learning in Indonesia, a country characterized by immense cultural diversity. The proposed model is grounded in the indigenous philosophy of the Lampung people known as Piil Pesenggiri. This philosophy functions as a socio-ethical framework built upon five interconnected pillars: Self-worth and integrity (Piil Pesenggiri), social openness (Nengah Nyappur), generosity (Nemui Nyimah), mutual respect (Bejuluk Beadek), and communal cooperation (Sakai Sambayan). Rather than treating culture as a background context, this study treats indigenous values as the conceptual foundation of the evaluation framework. Accordingly, the study aims to operationalize the Piil Pesenggiri philosophy into a culturally grounded evaluation model consisting of two latent constructs: Learning Process and Learning Outcomes. The model is empirically tested using Structural Equation Modeling (SEM) to examine its construct validity and the structural relationship between these constructs. By integrating indigenous philosophical principles into a measurable evaluation framework, this study contributes to the growing discourse on decolonizing assessment. It also provides an empirically validated model that can guide educators and researchers in designing culturally responsive evaluation systems for language learning.

THEORETICAL FRAMEWORK

The Assessment-Pedagogy Divide in Culturally Diverse Classrooms

The tension between standardized assessment and culturally responsive teaching represents a major challenge in contemporary education. Standardized assessments, by design, prioritize uniformity and comparability. To achieve this comparability, assessment content is often stripped of cultural specificity and contextual meaning (Sireci, 2020). However, this process is not culturally neutral. It tends to privilege the linguistic, cultural, and epistemological norms of dominant social groups, placing students from marginalized communities at a systemic disadvantage (Cappiali, 2023). Test items, contextual references, and even linguistic structures may reflect assumptions that are more familiar to students from dominant cultural backgrounds. Students from other cultural contexts must therefore navigate unfamiliar references while simultaneously demonstrating their academic competence.

Consequently, standardized assessment may function as a mechanism that reproduces dominant knowledge hierarchies within educational systems. Rather than solely measuring academic ability, such assessments can inadvertently evaluate how closely students' cultural experiences align with dominant norms. In this sense, the assessment system may measure a student's proximity to dominant cultural knowledge rather than their actual intellectual capability. This dynamic reinforces structural inequities and may penalize students whose cultural backgrounds differ from those embedded within the assessment framework.

This issue is further intensified by the washback effect, in which the high-stakes nature of testing shapes curriculum and instructional practices. Teachers who are under pressure to improve test scores are often incentivized to "teach to the test". As a result, instructional practices tend to prioritize tested content and formats, while other important competencies receive less attention (Papadopoulou et al., 2022; Romijn et al., 2021). These neglected competencies may include creativity, critical social awareness, and intercultural understanding. Over time, such pressures can narrow pedagogical practices. Repetitive exercises may replace Rich and meaningful learning experiences focused on memorization and test-taking strategies.

This situation creates a cyclical relationship between assessment and pedagogy. When assessments become decontextualized, instructional practices often follow suit. For students, this cycle may limit intellectual development and reduce engagement in learning. It may also communicate implicitly that students' cultural knowledge and lived experiences have limited value within formal education. Consequently, efforts to build inclusive and culturally responsive classrooms become increasingly difficult to sustain.

Culturally Sustaining Pedagogy and the Need for Aligned Assessment

Culturally Sustaining Pedagogy (CSP) emerged as a response to persistent inequities in education systems that fail to recognize students' cultural and linguistic diversity. Building on the foundational work of Culturally Relevant Pedagogy (Borck, 2020), which emphasizes academic achievement, cultural competence, and critical consciousness, CSP further advances this agenda. The shift from "relevance" to "sustenance" is intentional and significant. Rather than simply acknowledging students' cultural backgrounds, CSP seeks to sustain and strengthen the linguistic and cultural resources of their communities as legitimate forms of knowledge (Paris, 2021). A key premise of CSP is that learning becomes more meaningful and equitable when it is connected to students' identities, communities, and lived socio-political realities (Ervin, 2022). Importantly, CSP should not be understood solely as a pedagogical approach. It also implies a reconsideration of how knowledge is evaluated, since assessment systems ultimately determine what forms of learning are recognized and valued in formal education.

However, the transformative potential of CSP remains limited (Viano & Darling-Aduana, 2025) when educational outcomes are assessed using tools grounded in conflicting epistemological assumptions. Many conventional assessment systems prioritize individual performance, abstract knowledge, and standardized forms of expression, while overlooking contextual understanding and collective knowledge practices. As a result, pedagogical innovations inspired by CSP may still be evaluated using frameworks that do not reflect their underlying values. This misalignment highlights the need to redesign assessment systems to align with the epistemological principles of culturally sustaining education.

An assessment model aligned with CSP must therefore incorporate several essential characteristics. First, it should adopt a holistic perspective by evaluating not only cognitive achievement but also socio-emotional development, cultural identity formation, and the relational dimensions of learning (Smith et al., 2022a). Second, it should be context-sensitive by recognizing and integrating local knowledge systems, languages, and epistemologies that may differ from dominant academic traditions (McCarty & Brayboy, 2021). Finally, it should be empowering. Assessment should function not merely as a mechanism for ranking students but as a reflective and collaborative process that supports learning, self-awareness, and community engagement (da Silva Ale et al., 2025). The evaluation model proposed in this study operationalizes these principles by developing an assessment framework that integrates culturally grounded values into measurable learning constructs.

Piil Pesenggiri as a Framework for Holistic Evaluation

This research proposes that indigenous knowledge systems can provide coherent frameworks for designing culturally grounded evaluation models. However, these knowledge systems are often overlooked in mainstream educational research because they are frequently perceived as anecdotal rather than systematic (Yip & Chakma, 2024). Indigenous philosophies often include structured ethical principles that define appropriate behavior, social responsibility, and personal development within a community. These principles implicitly establish criteria for evaluating individual and collective achievement. Therefore, rather than serving merely as cultural values, such philosophies can also function as epistemological foundations for defining educational success.

This research bases its evaluation model on Lampung philosophy regarding Piil Pesenggiri. Far from being a collection of cultural traditions, Piil Pesenggiri represents a socio-ethical system that guides moral conduct, social harmony, and personal identity within the Lampung community (Anggraini & Fitriasari, 2022). Because philosophy articulates normative expectations regarding social interaction, responsibility, and self-respect, it provides implicit criteria for evaluating both learning processes and learning outcomes. Its five pillars form an interconnected system that reflects how individuals are expected to learn, interact, and contribute to their community. For this reason, philosophy offers a meaningful conceptual basis for constructing a holistic educational evaluation framework.

Process-oriented values are embodied in the pillars of mutual respect (Bejuluk Beadek), social openness (Nengah Nyappur), and communal cooperation (Sakai Sambayan), which directly inform the construct of Learning Process (Rimanto et al., 2022). These principles describe the social and relational conditions under which meaningful learning is expected to occur. For instance, Bejuluk Beadek promotes mutual respect among participants in the learning environment, fostering psychological safety and encouraging students to express ideas without fear of judgment. Similarly, Sakai Sambayan emphasizes collaborative engagement and mutual assistance. Such principles align with learning environments that prioritize dialogue, cooperation, and shared knowledge construction. Together, these pillars describe conditions that support inclusive and culturally responsive learning processes.

Outcome-oriented values are reflected in the pillars of self-worth (Piil Pesenggiri) and generosity (Nemui Nyimah), which inform the construct of Learning Outcomes (Rimanto et al., 2022). These principles define educational success beyond academic proficiency. Piil Pesenggiri emphasizes the development of personal integrity and a strong sense of cultural identity. Such identity can strengthen students' confidence and academic resilience. Meanwhile, Nemui Nyimah highlights generosity, empathy, and social responsibility toward others. From this perspective, successful education is reflected not only in cognitive achievement but also in the development of socially responsible individuals who contribute positively to their communities.

This study uses this indigenous philosophy as its theoretical anchor. It proposes that a Learning Process shaped by communal and relational values can positively influence Learning Outcomes, including both linguistic competence and culturally grounded dispositions. The model, therefore, conceptualizes educational evaluation as a relationship between culturally informed learning processes and holistic learning outcomes. This approach moves beyond superficial cultural inclusion, where culture appears only as contextual content. Instead, it embeds local epistemology into the evaluation model's conceptual structure (Loeng, 2020). In doing so, the framework challenges the assumption that educational success should be defined solely through Western-centric models of individual academic performance.

Table 1. Participant demographics

No.	Aspects	Total	Percentage (%)
1	Gender		
	Man	89	43.07
	Woman	118	56.93
2	Age		
	16 years old	62	29.95
	17 years old	80	38.61
	≥ 18 years old	65	31.44
3	Geographical background		
	Urban	99	47.83
	Suburbs	68	32.84
	Rural	40	19.33

METHODOLOGY

Research Design

This study examined a theoretical model describing the relationship between culturally grounded learning processes and Indonesian language learning outcomes. Because the study did not involve experimental manipulation, a non-experimental cross-sectional design was employed (Takona, 2024). This design enabled the investigation of relationships among variables within their natural educational context. Data were collected at a single point in time to capture existing patterns across the variables. The cross-sectional approach also allowed the analysis of covariance among variables in order to evaluate whether the observed relationships were consistent with the proposed structural model.

Participants and Procedure

The study involved 207 eleventh-grade students from three public high schools in North Lampung, Indonesia. Participants were selected using purposive sampling. The schools were chosen based on three criteria: representation of different geographical contexts (urban, suburban, and rural), implementation of the national Indonesian language curriculum, and similarity in academic and administrative structures across schools. These criteria ensured that the selected schools reflected the diversity of learning environments in the region while maintaining comparable instructional conditions.

After institutional approval had been obtained, informed consent was collected from all participants. Data collection was conducted during regular class sessions using questionnaires and performance-based language tests developed for this study. All responses were anonymized to ensure confidentiality and ethical research practices. **Table 1** presents the demographic characteristics of the participants, including gender, age, and geographical background.

Table 1 shows that the demographic distribution of the sample was relatively balanced. Female students represented 56.93% of the participants, while male students accounted for 43.07%. Most students were 17 years old (38.61%), followed by those aged 16 years (29.95%) and 18 years or older (31.44%). In terms of geographical context, 47.83% of students attended urban schools, 32.84% attended suburban schools, and 19.33% attended rural schools. This distribution indicated that the sample represented multiple educational contexts within the region.

Measures and Instruments

An evaluation instrument for Indonesian language learning was developed based on the indigenous philosophy of Piil Pesenggiri. The instrument measured two latent constructs: Learning Process and Learning Outcomes. These constructs represented the relational connection between culturally grounded instructional practices and holistic language competence. The indicators were derived from the ethical principles embedded in the Piil Pesenggiri philosophy and translated into observable educational variables.

The instrument consisted of questionnaires, classroom observation indicators, and performance-based language assessments. Questionnaire items were measured using a five-point Likert scale, ranging from strongly disagree to agree strongly. Language proficiency indicators were measured using objective and performance-based assessments designed to reflect culturally contextualized language use. The instrument, therefore, captured cultural values as evaluative constructs, rather than treating culture merely as contextual learning content.

Latent construct: Learning process

The Learning Process construct represented the quality of the learning environment shaped by cultural values. This construct integrated teacher-related, student-related, and environmental indicators because culturally grounded learning environments emerge from the interaction of these elements. Four observed indicators were used to measure this construct:

1) Teachers' in-class performance,
2) Teachers' personality,
3) Students' behavior during learning, and
4) Learning facilities.

Table 2. Mapping of Piil Pesenggiri Pillars to model constructs

Pillar of Piil Pesenggiri	Core meaning	Sample operationalization in the model
Piil Pesenggiri	Self-worth, integrity, pride in one's heritage	(Learning Process) Teacher encourages students to express their unique ideas. (Learning Outcomes) Students' writing reflects pride in their local identity.
Nengah Nyappur	Social openness, appreciating diversity	(Learning Process) Students actively listen to and respect differing opinions. (Learning Outcomes) Language attitude scale assesses openness toward cultural diversity.
Nemui Nyimah	Generosity, hospitality, willingness to share	(Learning Process) Teacher creates a welcoming and supportive classroom environment. (Learning Outcomes) Speaking task evaluates students' ability to communicate respectfully with others.
Bejuluk Beadek	Mutual respect, valuing others	(Learning Process) Students use polite and respectful language in interactions with peers and teachers. (Learning Outcomes) Language attitude scale measures respect toward language use and communication norms.
Sakai Sambayan	Communal cooperation, mutual assistance	(Learning Process) Students collaborate effectively during group learning activities. (Learning Outcomes) Speaking and writing tasks include themes of collaborative problem solving.

Teachers' in-class performance (X_1) measured how teachers planned, implemented, and concluded lessons while integrating cultural values into instructional activities. Data were collected through structured classroom observation and student rating scales. In addition, the teacher's personality (X_2) evaluated personal attributes aligned with cultural ideals, including role-model behavior, respectfulness, and the ability to create a supportive classroom climate. These attributes were assessed through student responses to Likert-scale questionnaires.

Furthermore, students' in-class behavior (X_3) captured engagement, collaboration, respectful interaction, and participation in culturally meaningful discussions. Data were obtained through student self-report questionnaires. Finally, learning facilities (X_4) assessed the availability and use of learning resources that reflected local culture, including texts, audio materials, and classroom learning tools. These data were gathered through structured observation and teacher reports.

Latent construct: Learning outcomes (η_1)

The Learning Outcomes construct represented students' holistic competence in Indonesian language learning. This construct encompassed both linguistic proficiency and culturally grounded attitudes toward language. Five observed indicators were used to represent this construct:

1) Listening skill,
2) Reading skill,
3) Speaking skill,
4) Writing skill, and
5) Language attitude.

Listening skill (Y_1) was assessed using multiple-choice questions based on culturally contextualized audio materials. Multiple-choice items enabled standardized evaluation of listening comprehension while minimizing scoring variability. Similarly, reading skill (Y_2) was measured through multiple-choice questions derived from texts containing local stories, historical narratives, and cultural themes. Cultural bias was minimized by selecting materials that were familiar within the Indonesian curriculum and validated by language experts.

In addition, speaking skill (Y_3) was evaluated through a performance-based task in which students discussed culturally relevant topics. Two independent raters assessed student responses using a standardized rubric. Likewise, writing skill (Y_4) was measured through a short essay related to cultural themes and evaluated by two trained raters. Finally, language attitude (Y_5) assessed students' pride and positive disposition toward the Indonesian language as part of their cultural identity. This indicator was included because culturally sustaining education recognizes language identity as a legitimate learning outcome rather than merely an affective variable.

All instruments underwent a systematic development process. Expert validation was conducted through focus group discussions involving linguists, cultural experts, and experienced teachers. A pilot test was then conducted to refine the items and ensure clarity. The final instrument demonstrated acceptable reliability and validity, with Cronbach's alpha values above 0.70 across all scales.

Operationalizing the Piil Pesenggiri Philosophy

The model operationalized the five pillars of Piil Pesenggiri into measurable educational indicators. Each pillar informed specific aspects of the Learning Process and Learning Outcomes constructs. This approach ensured that the evaluation framework reflected local value systems rather than merely incorporating cultural themes as contextual elements. **Table 2** illustrates the conceptual mapping between the philosophical pillars and the model constructs.

Data Analysis

Data were analyzed using Structural Equation Modeling (SEM) with LISREL 8.80. The analysis followed a two-step procedure. First, the measurement model was evaluated using Confirmatory Factor Analysis (CFA) conducted separately for the two latent constructs: Learning Process and Learning Outcomes. Construct validity was assessed by examining factor loadings (λ), Construct Reliability (CR), and Variance Extracted (VE).

Table 3. Goodness-of-fit indices for the structural model

Index	Value	Recommended threshold	Conclusion
Chi-Square p-value	0.052	> 0.05	Model is fit
RMSEA (Root Mean Square Error)	0.072	≤ 0.08	Model is fit
CFI (Comparative Fit Index)	0.98	≥ 0.90	Model is fit
GFI (Goodness of Fit Index)	0.95	≥ 0.90	Model is fit
AGFI (Adjusted Goodness of Fit Index)	0.90	≥ 0.90	Model is fit
NFI (Normed Fit Index)	0.97	≥ 0.90	Model is fit

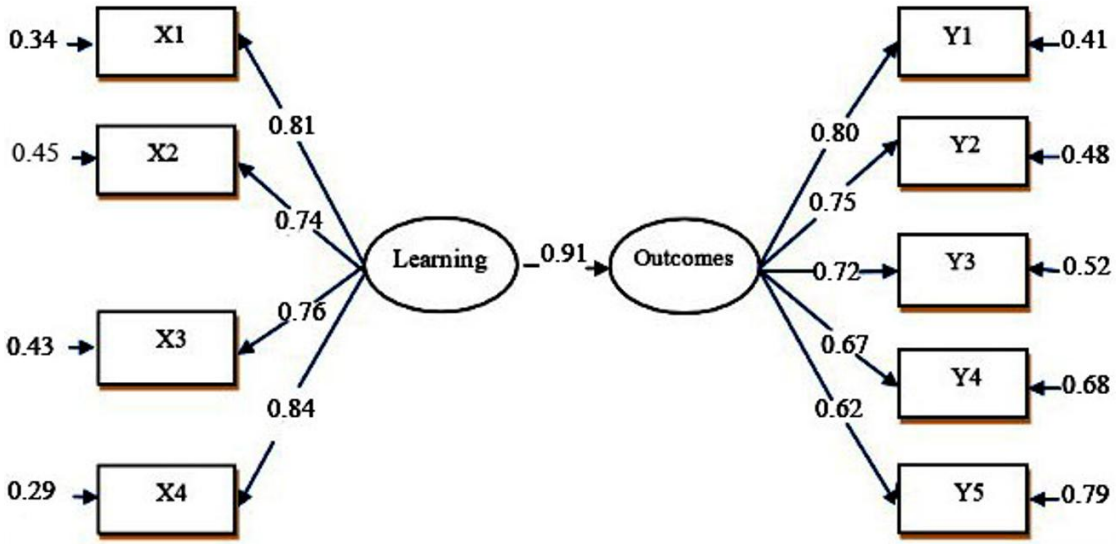

Figure 1. The final validated structural model with standardized coefficients $Chi - Square = 45.73$, $df = 22$, $P - Value = 0.0521$, $RMSEA = 0.072$ (Source: Authors' own elaboration, based on primary data using LISREL)

After the measurement model demonstrated acceptable validity, the structural model was tested to examine the relationship between Learning Process and Learning Outcomes. Model fit was evaluated using several standard indices, including Chi-Square p-value (> 0.05), Root Mean Square Error of Approximation (RMSEA ⩽ 0.08), Comparative Fit Index (CFI ⩾ 0.90), and Goodness of Fit Index (GFI ⩾ 0.90) (Groskurth et al., 2024; Sathyanarayana & Mohanasundaram, 2024).

RESULTS

Measurement Model Analysis

The results of the Confirmatory Factor Analysis (CFA) indicated that both measurement models adequately represented the observed data. Construct validity was evaluated based on the significance and magnitude of the factor loadings (λ). For the Learning Process construct, all factor loadings were statistically significant (t > 1.96) and ranged from 0.74 to 0.83. These values indicate that each indicator contributed meaningfully to the latent construct. Construct reliability was assessed using Construct Reliability (CR) and Variance Extracted (VE). The Learning Process construct achieved a CR value of 0.87 and a VE value of 0.62, both exceeding the recommended thresholds of 0.70 and 0.50.

Similarly, the Learning Outcomes construct demonstrated acceptable construct validity and reliability. All factor loadings were statistically significant (t > 1.96), with standardized values ranging from 0.48 to 0.64. The reliability indices also met the recommended criteria, with a CR value of 0.81 and a VE value of 0.51. These results indicate that the indicators adequately represented their respective latent constructs. Therefore, the measurement model was considered satisfactory and suitable for subsequent structural model analysis.

Structural Model Analysis

The structural model analysis examined the theoretical relationship between the Learning Process and Learning Outcomes constructs. The strength of this relationship was interpreted using standardized path coefficients (β) and the squared multiple correlation (R^2). Model fit was evaluated using several goodness-of-fit indices.

The results presented in **Table 3** indicate that the structural model demonstrated acceptable overall fit. The Chi-square p-value exceeded the recommended threshold (> 0.05), suggesting that the model was consistent with the observed data. In addition, the RMSEA value (0.072) fell within the acceptable range (⩽ 0.08). Other fit indices also met the recommended criteria, including CFI (0.98), GFI (0.95), AGFI (0.90), and NFI (0.97). Collectively, these indices indicate that the proposed structural model adequately represented the relationships among the study variables.

Table 4. Standardized factor loadings (λ) and variance explained (R^2) for indicators

Latent variable	Indicator	Factor loading (λ)	R^2 (%)
Learning process	(X_1) Teacher's performance	0.83	69
	(X_2) Teacher's personality	0.74	55
	(X_3) Student's behavior	0.76	58
	(X_4) Learning facilities	0.82	67
Learning outcomes	(Y_1) Listening skill	0.59	35
	(Y_2) Reading skill	0.64	41
	(Y_3) Speaking skill	0.56	31
	(Y_4) Writing skill	0.49	24
	(Y_5) Language attitude	0.48	23

As illustrated in **Figure 1**, the standardized path coefficient from Learning Process to Learning Outcomes was positive and statistically significant ($\beta = 0.91$, $t > 1.96$, $p < 0.001$). This result indicates a strong structural relationship between the two constructs. The model also produced a squared multiple correlation (R^2) value of 0.83 for Learning Outcomes. This finding suggests that 83% of the variance in Learning Outcomes was associated with the Learning Process construct.

Table 4 presents the standardized factor loadings (λ) and the variance explained (R^2) for each indicator. These values indicate the relative contribution of each indicator to its latent construct.

Table 4 explains that for the Learning Process construct, all indicators showed substantial contributions. Teacher's Performance (X_1) had the highest contribution ($R^2 = 69\%$), followed by Learning Facilities (X_4) with $R^2 = 67\%$. Student Behavior (X_3) explained 58% of the variance, while Teacher's Personality (X_2) contributed 55%. These results indicate that the construct was supported by multiple complementary indicators that collectively represented the learning environment.

For the Learning Outcomes construct, the indicators also contributed meaningfully to the construct. Reading Skill (Y_2) showed the largest contribution ($R^2 = 41\%$), followed by Listening Skill (Y_1) with $R^2 = 35\%$. Speaking Skill (Y_3) explained 31% of the variance. Writing Skill (Y_4) and Language Attitude (Y_5) showed relatively lower R^2 values of 24% and 23%, respectively. However, these indicators remained important because they represented productive language ability and cultural orientation toward language learning. Their inclusion ensured that the construct captured both linguistic performance and culturally grounded attitudes, consistent with the theoretical framework of holistic language competence.

DISCUSSION

This study provides empirical support for an evaluation model grounded in indigenous philosophy. The findings indicate that cultural values embedded in Piil Pesenggiri can be translated into measurable constructs within an educational evaluation framework. Previous studies have emphasized the importance of developing reliable and valid instruments in educational research (Clark & Watson, 2019; Mohamad et al., 2015). In the present study, the indicators representing the Learning Process and Learning Outcomes constructs demonstrated acceptable levels of validity and reliability. However, the significance of these results extends beyond psychometric adequacy. The findings suggest that local cultural principles can be formalized into stable evaluative constructs that capture relational dimensions of learning. This interpretation aligns with recent discussions highlighting the need to incorporate socio-cultural perspectives into educational measurement (Franco et al., 2024). More broadly, these results indicate that indigenous knowledge systems can function not only as sources of pedagogical inspiration but also as conceptual foundations for culturally grounded assessment frameworks.

The structural model analysis revealed a strong relationship between the Learning Process and Learning Outcomes constructs. This result suggests that culturally grounded learning environments are closely associated with students' holistic language development. Previous studies have shown that culturally responsive teaching practices can enhance both academic achievement and student engagement (Borck, 2020; da Silva Ale et al., 2025; Flint et al., 2021). The findings of this study provide empirical support for these perspectives in the context of language learning evaluation. Importantly, the Learning Process construct was represented by a combination of teacher practices, student participation, and culturally supportive learning environments. These elements reflect the relational orientation of Piil Pesenggiri, which emphasizes mutual respect, social interaction, and communal responsibility. Therefore, the strong structural relationship observed in the model should be interpreted as evidence of the internal coherence between culturally grounded learning processes and broader language learning outcomes rather than as a deterministic causal relationship. Similar interpretations have been proposed in studies emphasizing the role of culturally sustaining education in promoting inclusive and meaningful learning environments (Kelly-Howard, 2021; Pasternak et al., 2023).

From a broader educational perspective, the findings highlight the importance of integrating cultural values into language learning evaluation systems. Language learning involves not only the acquisition of linguistic skills but also the development of cultural identity and social awareness (Hossain, 2024). In culturally diverse contexts such as Indonesia, the integration of local wisdom into language education has been widely recommended to support meaningful learning experiences (Paris, 2021; Viano & Darling-Aduana, 2025). Previous studies have also shown that culturally grounded learning environments can strengthen student engagement and support deeper understanding of language use in social contexts (Bisbey et al., 2021; Chwialkowska, 2020; Kelly-Howard, 2021). The philosophy of Piil Pesenggiri reflects these principles by emphasizing social interaction, respect, and communal responsibility. Incorporating such values into evaluation models allows language learning assessment to capture

both linguistic competence and culturally grounded dispositions. This approach, therefore, aligns assessment practices with the socio-cultural foundations of language learning.

More importantly, this study contributes to ongoing discussions about the need to reconsider dominant approaches to educational evaluation. Conventional assessment systems often rely on standardized indicators that emphasize decontextualized cognitive performance. Such approaches may overlook relational and cultural dimensions that are central to learning in many communities. By grounding the evaluation framework in the philosophy of Piil Pesenggiri, this study demonstrates how indigenous knowledge can inform the development of culturally responsive assessment models. The findings illustrate that local epistemologies can be systematically incorporated into evaluation frameworks while maintaining methodological rigor. In this way, the study offers an example of how culturally grounded evaluation models can support the broader agenda of decolonizing assessment. This approach expands the conceptual foundations of what counts as valid evidence of learning (Bujuri, 2023).

Theoretical Implications

This study offers two main theoretical contributions. First, it provides empirical support for CSP by extending its relevance beyond pedagogy to the domain of educational evaluation. Previous discussions of CSP have primarily focused on culturally responsive teaching practices and classroom engagement. The findings of this study suggest that the principles of CSP can also inform the design of evaluation frameworks. When elements of the learning environment—such as teacher practices, student participation, and learning facilities—are aligned with local cultural values, they form a coherent system that is closely associated with students' learning outcomes. This perspective expands the theoretical scope of CSP by demonstrating that culturally sustaining principles can guide not only how learning occurs but also how learning is evaluated. This extension suggests that culturally sustaining principles may serve as a conceptual foundation for developing culturally responsive assessment models. These findings support arguments that culturally grounded educational practices are fundamental to meaningful learning and academic engagement (Gay, 2018).

Second, this study contributes methodologically by presenting a framework for translating indigenous philosophical principles into measurable psycho-educational constructs. The process of mapping the five pillars of Piil Pesenggiri onto observable indicators of learning processes and outcomes illustrates how cultural philosophies can be operationalized within empirical research. This approach offers a methodological pathway for integrating indigenous knowledge systems into quantitative educational studies. It also challenges the assumption that quantitative methods necessarily detach research from cultural context. Instead, the findings demonstrate that statistical modeling can be used to validate culturally grounded educational frameworks when the constructs are carefully conceptualized. In this way, the study responds to calls for the decolonization of research methodologies, which emphasize approaches that respect and incorporate the worldviews of local communities (Smith et al., 2022b).

Practical Implications

The validated model has important practical implications for educational stakeholders. For policymakers, it offers a potential alternative to narrow, high-stakes national examinations that often generate negative washback effects. Evaluation systems that incorporate culturally grounded indicators may provide a more comprehensive representation of student learning and development (Evans, 2023; Kushnier et al., 2023). Adopting such frameworks could shift the focus of assessment from ranking students to improving the quality of teaching and learning in culturally meaningful ways (Aguilar et al., 2025).

For school leaders and teacher educators, the model highlights key components of the learning process that contribute to language learning outcomes. The prominence of teacher practices related to the transmission of cultural values suggests the importance of professional development programs that prepare educators to act as cultural facilitators as well as subject specialists (Lowe et al., 2021). For classroom teachers, the model provides a holistic framework for reflecting on instructional practices. It highlights the importance of cultivating respectful classroom interactions (Bejuluk Beadek), encouraging collaborative learning (Sakai Sambayan), and connecting curriculum content to students' lived experiences (Piil Pesenggiri). These elements demonstrate that culturally grounded practices function as integral components of effective learning environments rather than as peripheral "soft skills" (Bujuri, 2023).

Limitations and Future Directions

Although this study provides meaningful findings, several limitations should be acknowledged. The study employed a cross-sectional research design. This design allows the examination of structural relationships but does not establish causal relationships over time (Becerra-Lubies et al., 2021). Future longitudinal studies could examine how culturally grounded evaluation models influence student learning development across extended periods.

Furthermore, the model was validated within the specific cultural context of Lampung, Indonesia. While the study proposes a methodological prototype, the indicators require adaptation and re-validation before being applied in other cultural settings (da Silva Ale et al., 2025; Sireci, 2020). Future research should therefore replicate this approach in different indigenous and local contexts. Such studies would help build comparative evidence on how culturally grounded evaluation models operate across educational systems. Future investigations could also explore how this evaluation framework can be integrated with classroom-based formative assessment practices.

CONCLUSIONS

This study aimed to develop and validate an evaluation model for Indonesian language learning grounded in the indigenous philosophy of Piil Pesenggiri. The study operationalized the cultural principles embedded in this philosophy into two latent constructs: Learning Process and Learning Outcomes. The results of the Structural Equation Modeling analysis showed that the measurement model demonstrated acceptable validity and reliability. The structural relationship between the two constructs was also statistically significant. These findings indicate that culturally grounded learning processes are closely associated with students' language learning outcomes.

The study also demonstrates that indigenous cultural values can be translated into measurable indicators within an educational evaluation framework. In this model, the relational principles of Piil Pesenggiri were represented through indicators related to teacher practices, student participation, learning facilities, and language learning outcomes. This approach shows that local cultural philosophies can inform the design of structured and empirically tested evaluation models. More broadly, the findings contribute to ongoing discussions on culturally responsive assessment. They illustrate how culturally grounded evaluation frameworks can support the development of context-sensitive assessment practices while maintaining methodological rigor.

Despite these contributions, several limitations should be acknowledged. First, the study used a cross-sectional research design, which limits the ability to interpret structural relationships as causal. Second, the model was validated within the specific cultural context of Lampung, Indonesia. Future studies should test similar models in different cultural settings to examine their broader applicability. Further research may also explore how culturally grounded evaluation models can be integrated with classroom-based formative assessment practices.

Author contributions: SS: Conceptualization, methodology, original draft preparation, and review and editing; **AP:** Validation, supervision; **MF:** Validation, supervision; **MM:** Formal analysis and investigation; **DR:** Formal analysis and investigation. All authors contributed to the conception and design of the study. All authors agreed with the results and conclusions.

Funding: The authors of this study are solely responsible for providing the necessary funding.

Ethical statement: The authors staetd that the study complied with ethical standards for research involving human participants. Approval was obtained from school authorities, including teachers and institutional leaders, prior to data collection. All students participated voluntarily and provided informed consent after being informed about the study's purpose and procedures, with the right to withdraw at any time without consequences. All data were anonymized, and no identifiable information was collected or reported. The data were used solely for research purposes and managed in accordance with principles of anonymity and confidentiality.

AI statement: The authors stated that the article was prepared with the assistance of artificial intelligence tools to enhance clarity and readability. Specifically, ChatGPT (version 5.2) was used to support the refinement of academic writing, and Grammarly was utilized for grammar checking and correction. The use of AI was limited to improving the quality of language and presentation. All AI-generated outputs were carefully reviewed, revised, and validated by the authors to ensure accuracy, integrity, and full human oversight in the writing process.

Declaration of interest: The author affirms that there are no conflicts of interest in the composition and dissemination of this study.

Data sharing statement: Data supporting the findings and conclusions are available upon request from the corresponding author.

REFERENCES

Aguilar, L. N., Smith, L. H., & Goforth, A. N. (2025). Critical relationality in research: A framework for engaging in research alongside Indigenous communities. *Journal of School Psychology, 110*, Article 101430. https://doi.org/10.1016/j.jsp.2025.101430

Alhazmi, A. A., & Kaufmann, A. (2022). Phenomenological qualitative methods applied to the analysis of cross-cultural experience in novel educational social contexts. *Frontiers in Psychology, 13*. https://doi.org/10.3389/fpsyg.2022.785134

Al-Kamzari, F., & Alias, N. (2025). A systematic literature review of project-based learning in secondary school physics: Theoretical foundations, design principles, and implementation strategies. *Humanities and Social Sciences Communications, 12*(1), Article 286. https://doi.org/10.1057/s41599-025-04579-4

Anggraini, R. D., & Fitriasari, S. (2022). The transformation of the value of Piil Pesenggiri local wisdom in building harmony between natives and immigrants. *Proceedings of the Annual Civic Education Conference* (pp. 370-389). Atlantis Press. https://doi.org/10.2991/assehr.k.220108.067

Becerra-Lubies, R., Mayo, S., & Fones, A. (2021). Revitalization of indigenous languages and cultures: Critical review of preschool bilingual educational policies in Chile (2007–2016). *International Journal of Bilingual Education and Bilingualism, 24*(8), 1147-1162. https://doi.org/10.1080/13670050.2018.1563584

Bisbey, T. M., Kilcullen, M. P., Thomas, E. J., Ottosen, M. J., Tsao, K., & Salas, E. (2021). Safety culture: An integration of existing models and a framework for understanding its development. *Human Factors: The Journal of the Human Factors and Ergonomics Society, 63*(1), 88-110. https://doi.org/10.1177/0018720819868878

Borck, C. R. (2020). "I belong here.": Culturally sustaining pedagogical praxes from an alternative high school in Brooklyn. *The Urban Review, 52*(2), 376-391. https://doi.org/10.1007/s11256-019-00536-z

Brondízio, E. S., Aumeeruddy-Thomas, Y., Bates, P., Carino, J., Fernández-Llamazares, Á., Ferrari, M. F., Galvin, K., Reyes-García, V., McElwee, P., Molnár, Z., Samakov, A., & Shrestha, U. B. (2021). Locally based, regionally manifested, and globally relevant: Indigenous and local knowledge, values, and practices for nature. *Annual Review of Environment and Resources, 46*(1), 481-509. https://doi.org/10.1146/annurev-environ-012220-012127

Bujuri, D. A., Muqowim, Baiti, M., Handayani, T., Saputra, A. D., Shawmi, A. N., & Abron, F. (2023). Environmental-based character education: Implementation of Lampung society life philosophy values (Piil Pesenggiri) in elementary school. *International Journal of Elementary Education, 7*(2), 243-254. https://doi.org/10.23887/ijee.v7i2.59250

Cappiali, T. M. (2023). A paradigm shift for a more inclusive, equal, and just academia? Towards a transformative-emancipatory pedagogy. *Education Sciences, 13*(9), Article 876. https://doi.org/10.3390/educsci13090876

Chang, W.-C., & Viesca, K. M. (2022). Preparing teachers for culturally responsive/relevant pedagogy (CRP): A critical review of research. *Teachers College Record, 124*(2), 197-224. https://doi.org/10.1177/01614681221086676

Chwialkowska, A. (2020). Maximizing cross-cultural learning from exchange study abroad programs: Transformative learning theory. *Journal of Studies in International Education, 24*(5), 535-554. https://doi.org/10.1177/1028315320906163

Clark, L. A., & Watson, D. (2019). Constructing validity: New developments in creating objective measuring instruments. *Psychological Assessment, 31*(12), 1412-1427. https://doi.org/10.1037/pas0000626

da Silva Ale, C. C., Hall, J., Barrett, G., Rocca, C. H., & Vilela Borges, A. L. (2025). Cultural adaptation and validation of the desire to avoid pregnancy scale in Brazil. *PLOS One, 20*(7), Article e0327553. https://doi.org/10.1371/journal.pone.0327553

Dunham, H., Oti, O. A., & Lawton, A. (2025). Examining critical consciousness within culturally sustaining literacy pedagogies: A systematic review of the literature. *Literacy Research: Theory, Method, and Practice, 74*(1), 257-279. https://doi.org/10.1177/23813377251358198

Ervin, J. (2022). Critically reading the canon: Culturally sustaining approaches to a prescribed literature curriculum. *Journal of Adolescent & Adult Literacy, 65*(4), 321-329. https://doi.org/10.1002/jaal.1208

Evans, C. M. (2023). Applying a culturally responsive pedagogical framework to design and evaluate classroom performance-based assessments in Hawai'i. *Applied Measurement in Education, 36*(3), 269-285. https://doi.org/10.1080/08957347.2023.2214655

Flint, A. S., Laman, T. T., & Jackson, T. O. (2021). Culturally sustaining pedagogies in education. *Theory Into Practice, 60*(3), 227-230. https://doi.org/10.1080/00405841.2021.1911580

Franco, M. P., Bottiani, J. H., & Bradshaw, C. P. (2024). Assessing teachers' culturally responsive classroom practice in PK–12 schools: A systematic review of teacher-, student-, and observer-report measures. *Review of Educational Research, 94*(5), 743-798. https://doi.org/10.3102/00346543231208720

Gay, G. (2018). *Culturally responsive teaching: Theory, research, and practice*. Teachers college press.

Groskurth, K., Bluemke, M., & Lechner, C. M. (2024). Why we need to abandon fixed cutoffs for goodness-of-fit indices: An extensive simulation and possible solutions. *Behavior Research Methods, 56*(4), 3891-3914. https://doi.org/10.3758/s13428-023-02193-3

Hanesworth, P., Bracken, S., & Elkington, S. (2019). A typology for a social justice approach to assessment: Learning from universal design and culturally sustaining pedagogy. *Teaching in Higher Education, 24*(1), 98-114. https://doi.org/10.1080/13562517.2018.1465405

Hossain, K. I. (2024). Reviewing the role of culture in English language learning: Challenges and opportunities for educators. *Social Sciences & Humanities Open, 9*, Article 100781. https://doi.org/10.1016/j.ssaho.2023.100781

Kelly-Howard, K. S. (2021). Lessons learned from a review of diverse literature in the reading teacher (2015-2020). *The Reading Teacher, 75*(1), 51-60. https://doi.org/10.1002/trtr.2015

Kushnier, L., Nadin, S., Hill, M. E., Taylor, M., Jun, S., Mushquash, C. J., Puinean, G., & Gokiert, R. (2023). Culturally responsive evaluation: A scoping review of the evaluation literature. *Evaluation and Program Planning, 100*, Article 102322. https://doi.org/10.1016/j.evalprogplan.2023.102322

Ladson-Billings, G. (2021a). I'm here for the hard re-set: Post pandemic pedagogy to preserve our culture. *Equity & Excellence in Education, 54*(1), 68-78. https://doi.org/10.1080/10665684.2020.1863883

Ladson-Billings, G. (2021b). Three decades of culturally relevant, responsive, & sustaining pedagogy: What lies ahead? *The Educational Forum, 85*(4), 351-354. https://doi.org/10.1080/00131725.2021.1957632

Lawson, T. K., Knox, J., Romero, E., Molina Palacios, A., & Fallon, L. M. (2024). Check yourself! Exploring current culturally responsive teaching assessment measures. *Psychology in the Schools, 61*(6), 2649-2667. https://doi.org/10.1002/pits.23189

Loeng, S. (2020). Self-directed learning: A core concept in adult education. *Education Research International, 2020*(1), Article 3816132. https://doi.org/10.1155/2020/3816132

Lowe, K., Tennent, C., Moodie, N., Guenther, J., & Burgess, C. (2021). School-based Indigenous cultural programs and their impact on Australian Indigenous students: A systematic review. *Asia-Pacific Journal of Teacher Education, 49*(1), 78-98. https://doi.org/10.1080/1359866X.2020.1843137

McCarty, T. L., & Brayboy, B. M. J. (2021). Culturally responsive, sustaining, and revitalizing pedagogies: Perspectives from native American education. *The Educational Forum, 85*(4), 429-443. https://doi.org/10.1080/00131725.2021.1957642

Mohamad, M. M., Sulaiman, N. L., Sern, L. C., & Salleh, K. M. (2015). Measuring the validity and reliability of research instruments. *Procedia - Social and Behavioral Sciences, 204*, 164-171. https://doi.org/10.1016/j.sbspro.2015.08.129

Nalipay, M. J. N., King, R. B., & Cai, Y. (2020). Autonomy is equally important across East and West: Testing the cross-cultural universality of self-determination theory. *Journal of Adolescence, 78*(1), 67-72. https://doi.org/10.1016/j.adolescence.2019.12.009

Nortvedt, G. A., Wiese, E., Brown, M., Burns, D., McNamara, G., O'Hara, J., Altrichter, H., Fellner, M., Herzog-Punzenberger, B., Nayir, F., & Taneri, P. O. (2020). Aiding culturally responsive assessment in schools in a globalising world. *Educational Assessment, Evaluation and Accountability, 32*(1), 5-27. https://doi.org/10.1007/s11092-020-09316-w

Papadopoulou, K., Palaiologou, N., & Karanikola, Z. (2022). Insights into teachers' intercultural and global competence within multicultural educational settings. *Education Sciences, 12*(8), Article 502. https://doi.org/10.3390/educsci12080502

Paris, D. (2021). Culturally sustaining pedagogies and our futures. *The Educational Forum, 85*(4), 364-376. https://doi.org/10.1080/00131725.2021.1957634

Pasternak, D. L., Evans, L. M., Allen, K. R., Turner, C. R., Knapp, J. M., Harris, A., Wu, X., Bartlett, M., Habeck, T., Worm, J., Taylor, K., & Nix, T. (2023). The sociohistorical evolution of the language of culturally-based pedagogy and its impact on teacher education. *Urban Education, 58*(10), 2245-2275. https://doi.org/10.1177/0042085920959123

Rimanto, R., Hermanto, A., Arsyad, M., & Rohmawati, A. (2022). Examining Piil Pesenggiri philosophy of life concept in the context of religious moderation. *Analisis: Jurnal Studi Keislaman, 22*(1), 133-152. https://doi.org/10.24042/ajsk.v22i1.12445

Romijn, B. R., Slot, P. L., & Leseman, P. P. M. (2021). Increasing teachers' intercultural competences in teacher preparation programs and through professional development: A review. *Teaching and Teacher Education, 98*, Article 103236. https://doi.org/10.1016/j.tate.2020.103236

Sathyanarayana, S., & Mohanasundaram, T. (2024). Fit indices in structural equation modeling and confirmatory factor analysis: Reporting guidelines. *Asian Journal of Economics, Business and Accounting, 24*(7), 561-577. https://doi.org/10.9734/ajeba/2024/v24i71430

Sireci, S. G. (2020). Standardization and UNDERSTANDardization in educational assessment. *Educational Measurement: Issues and Practice, 39*(3), 100-105. https://doi.org/10.1111/emip.12377

Smith, L. H., Hernandez, B. E., Joshua, K., Gill, D., & Bottiani, J. H. (2022b). A scoping review of school-based prevention programs for indigenous students. *Educational Psychology Review, 34*(4), 2783-2824. https://doi.org/10.1007/s10648-022-09698-x

Smith, T., Avraamidou, L., & Adams, J. D. (2022a). Culturally relevant/responsive and sustaining pedagogies in science education: Theoretical perspectives and curriculum implications. *Cultural Studies of Science Education, 17*(3), 637-660. https://doi.org/10.1007/s11422-021-10082-4

Takona, J. P. (2024). Research design: Qualitative, quantitative, and mixed methods approaches / sixth edition. *Quality & Quantity, 58*(1), 1011-1013. https://doi.org/10.1007/s11135-023-01798-2

Viano, S., & Darling-Aduana, J. (2025). Culturally relevant pedagogy in K–12 online learning: A systematic review. *Review of Educational Research, 0*(0). https://doi.org/10.3102/00346543251320355

Walker, M. E., Olivera-Aguilar, M., Lehman, B., Laitusis, C., Guzman-Orth, D., & Gholson, M. (2023). Culturally responsive assessment: Provisional principles. *ETS Research Report Series, 2023*(1), 1-24. https://doi.org/10.1002/ets2.12374

Yip, S. Y., & Chakma, U. (2024). The teaching of Indigenous knowledge and perspectives in initial teacher education: A scoping review of empirical studies. *Journal of Further and Higher Education, 48*(3), 287-300. https://doi.org/10.1080/0309877X.2024.2327029