

Integrating Indigenization in the Instructional Practices of Secondary School Teachers: Toward the Development of a Faculty Training Design

Joyce A. Lopez, LPT, MAT

Isabela State University, Echague Campus, Isabela, Philippines

Publication history: Received: March 11, 2026; Revised: April 20, 2026; Accepted: April 25, 2026

Email of Corresponding Author: joyceyceabella23@gmail.com

Abstract

This study examined the extent of indigenization integration in the instructional practices of secondary school teachers in Ifugao and developed a context-specific training design to address identified gaps. Anchored on the Indigenous Peoples Education (IPEd) Framework and the Indigenous Peoples Rights Act (IPRA), the study focused on integrating Indigenous Knowledge Systems and Practices (IKSP) into instructional strategies, materials, and assessment. A descriptive-comparative quantitative research design was employed, involving 215 secondary school teachers from selected public schools. Data were collected using a validated self-developed questionnaire (Cronbach's alpha = 0.946), supplemented by focus group discussions and key informant interviews, and analyzed using frequency, mean, t-test, and ANOVA. Findings revealed that teachers generally demonstrate a high level of indigenization integration across instructional strategies, materials, and assessment. Instructional strategies showed the strongest integration, followed by materials, while assessment practices exhibited comparatively weaker and less participatory implementation. Despite this, integration remains largely contextual and teacher-driven rather than fully transformative and community-anchored. Significant differences were observed based on subject area and training exposure, while sex showed no significant influence. Limited training exposure emerged as a critical constraint affecting the depth and consistency of indigenization practices. The study concludes that while indigenization is present in classroom practices, it remains procedural and insufficiently embedded within community-based epistemologies. It recommends the institutionalization of structured, progressive professional development programs, strengthened policy support, and enhanced collaboration with Indigenous communities to achieve deeper integration. This study supports SDG 4 (Quality Education) by promoting inclusive and culturally responsive teaching, as well as SDG 10 (Reduced Inequalities) and SDG 11 (Sustainable Cities and Communities) through the preservation of Indigenous knowledge systems. Its sustainability impact lies in strengthening educational and cultural sustainability by enhancing teacher capacity, supporting cultural preservation, and fostering community-engaged and contextually relevant learning systems.

Keywords: Assessment Practices, Culture-Based Education, Indigenous Knowledge Systems and Practices, Indigenization, Instructional Materials, Instructional Strategies, Professional Development, Secondary Education

1. Introduction

Education functions not only as a means of knowledge acquisition but also as a transformative force that shapes learners' awareness, responsibility, and preparedness in an interconnected world. However, the integration of Indigenous Knowledge Systems and Practices (IKSP) within formal education remains a persistent challenge, particularly in balancing cultural preservation with global competitiveness. While policies and frameworks promote indigenization, actual classroom implementation remains inconsistent. This study examines the extent of indigenization integration in the instructional practices of secondary school teachers in Ifugao and aims to develop a context-specific training program to address identified gaps.

1.1 Background of Indigenization in Instructional Practices of Secondary Teachers in Ifugao

Education globally is recognized as a tool for developing learners' knowledge, skills, and values while maintaining cultural identity. However, many systems struggle to integrate indigenous knowledge alongside global standards. Studies indicate that mainstream education often marginalizes Indigenous knowledge, privileging Western perspectives, resulting in disengagement and lower academic achievement among Indigenous learners (Ferrufino, 2024; Dei, et al., 2022). Efforts to address this include culturally responsive and inclusive pedagogies, as seen in countries such as Canada, Australia, and New Zealand, where education reforms emphasize integrating Indigenous perspectives across curricula (Howe, et al., 2021). This aligns with the United Nations' Sustainable Development Goal 4 (SDG 4), which promotes inclusive and equitable quality education through culturally responsive curricula (United Nations, 2015). Contextualization and localization further support this goal by aligning instruction with learners' lived experiences and cultural contexts (Vindigni, 2024; Sariyatun & Marpelina, 2024). Culture-based teaching has been shown to improve engagement,

understanding, and academic performance while supporting cultural sustainability (Tracey, et al., 2015; Efimoff, 2022; Nataño, 2023; Adams & Farnsworth, 2020). In the Philippines, the Indigenous Peoples' Education (IPEd) Program institutionalizes these efforts through policies such as DepEd Order No. 62, s. 2011 and DepEd Order No. 36, s. 2013, promoting culturally grounded yet globally competitive education (Hays, 2010; Phyak & De Costa, 2021; Rosnon & Talib, 2019). Despite these policies, teachers face challenges in integrating IKSP due to limited training, resources, and structured support, resulting in fragmented implementation (Pastera, 2024).

1.2 Themes on Indigenization Across Instructional Strategies, Materials, and Assessment

Culture-Based Education (CBE) enhances learning by aligning instruction with students' cultural identities, improving engagement and academic performance. It also supports cultural preservation and diversity (Restu, 2022; Zahrika & Andaryani, 2023), requiring structured collaboration among stakeholders (Guzman, 2020). IPEd competencies emphasize IKSP integration, community engagement, and reflective teaching practices (Follero & Asuncion, 2024; Coles-Ritchie & Charles, 2022; Averill and McRae, 2019). Effective implementation requires sustained professional development and culturally grounded curriculum adaptation. Culturally responsive pedagogy is applicable across subject areas. In core disciplines, it connects learning to students' cultural contexts (Chenowith, 2014; López, 2016; Xie & Ferguson, 2022; Caingcoy, 2023). In personal and social formation subjects, it strengthens identity and values (Belano & Perez, 2024; Pecson & Morales, 2026; Karataş & Oral, 2015; Kurniawan et al., 2024). In applied and career-oriented areas, it enhances relevance and community engagement (Edobane, 2025; Mara et al., 2025; Hebrona and Gono Jr., 2025; Jabbar & Hardaker, 2012; Sleeter, 2012; Allison-Burbank et al., 2023). Instructional practices integrating indigenization include strategies, materials, and assessment. Effective strategies such as differentiated instruction, collaborative learning, discussion, and problem-based learning enhance engagement and critical thinking (Blaz, 2016; Smale-Jacobse et al., 2019; Flavia & Vijaya, 2018; Samuel & Nduta, 2025; Michael & Matete, 2024; Omovie & Kpangban, 2023; Michael & Ephrem, 2022; De Witte & Rogge, 2016; Coila et al., 2019; Buchman, 2024). Instructional materials improve comprehension and cultural relevance but are often limited (Mercado, 2021; Grover, 2017). Instructional materials give the exposure on lesson planning, appropriate selection and preparation of instructional materials and the usage of reinforcement and assessment tools and strategies (Guzman, 2023). Assessment practices require culturally responsive approaches to capture indigenous learning (Webb & Mashford-Pringle, 2022; Kennedy, 2012). Teacher characteristics such as age, sex, subject area, and training influence indigenization practices (Naidoo, 2010; Mudaly, 2018; Howe et al., 2021; Riley et al., 2024; Almeda, 2023). Professional development is critical in strengthening teachers' capacity to implement culturally responsive instruction (Fellner, 2018; Kadonsi & Kenneth, 2024; Grange, 2009; Gay, 2010; Gist et al., 2019).

1.3 Local, National, and Global Context of Indigenization in Secondary Education

Globally, education systems are moving toward culturally inclusive frameworks, yet challenges in integrating Indigenous knowledge persist (Ferrufino, 2024; Dei et al., 2022). International efforts highlight the importance of decolonizing education and embedding Indigenous perspectives (Howe, et al., 2021). Nationally, the Philippines institutionalizes indigenization through IPEd policies and curriculum frameworks, emphasizing localization and cultural relevance (DepEd Order No. 62, s. 2011; DepEd Order No. 32, s. 2015). However, implementation gaps remain due to limited teacher training and resources (Pastera, 2024; Azizah et al., 2025; Litaay et al., 2025). Locally, Ifugao presents a culturally diverse context with multiple ethnolinguistic groups, necessitating culturally responsive education. However, teachers face challenges in planning, implementation, and assessment of indigenized instruction (Kennedy, 2012; Webb & Mashford-Pringle, 2022; Basiwal-Ao-Wat & Tovera-Ayang-Ang, 2024).

1.4 Theoretical and Conceptual Basis of Indigenization Integration in Teaching Practices

This study is anchored on the Indigenous Peoples Education (IPEd) Framework (DepEd Order No. 62, s. 2011; DepEd Order No. 32, s. 2015), which promotes the integration of IKSP into curriculum, pedagogy, and assessment. The framework emphasizes contextualization, localization, and culturally responsive teaching to support holistic learner development. It is further supported by the Indigenous Peoples Rights Act (IPRA) of 1997, which ensures community participation in education. The framework highlights collaboration among stakeholders, including educational institutions and Indigenous communities, to ensure culturally grounded and inclusive education. Conceptually, the study examines the integration of indigenization in instructional strategies, materials, and assessment, identifies best practices in planning, implementation, and evaluation, and uses these findings to develop a teacher training program.

1.5 Research Gaps on Indigenization Practices and Rationale for Training Design Development

Despite existing policies and frameworks, indigenization remains inconsistently implemented. Indigenous knowledge is often treated as supplementary rather than integrated across disciplines (Bhattarai, 2021; Matindike & Ramdhany, 2024; Pastera, 2024). Teachers face challenges due to limited training, lack of structured guidelines, and insufficient resources (Azizah et al., 2025; Litaay et al., 2025; Fellner, 2018; Kadonsi & Kenneth, 2024). Variations in teacher profiles further contribute to inconsistencies in implementation (Almeda, 2023). Existing literature emphasizes the need for structured, context-specific professional development programs to support indigenization (Prihartanto et al., 2025). However, there is limited empirical research focusing on the extent of integration and best practices in culturally diverse contexts such as

Ifugao. This study addresses these gaps by examining instructional practices and developing an evidence-based training design to enhance indigenization in teaching.

1.6 Alignment of Indigenization in Teaching with Sustainable Development Goals (SDGs)

This study aligns primarily with: SDG 4 – Quality Education, which promotes inclusive, equitable, and culturally responsive education (United Nations, 2015). SDG 10 – Reduced Inequalities, by addressing disparities in education experienced by Indigenous learners. SDG 11 – Sustainable Cities and Communities, through the preservation of cultural heritage and local knowledge systems. By strengthening indigenized instructional practices, the study supports equitable access to culturally relevant education and lifelong learning opportunities.

1.7 Importance of Indigenization Integration to Multidisciplinary Sustainability

This study contributes to educational sustainability by enhancing culturally responsive teaching practices and improving teacher capacity. It supports cultural sustainability by preserving Indigenous knowledge and promoting identity affirmation within formal education. It also contributes to socio-economic sustainability by empowering learners through relevant and meaningful education that connects to community contexts. Additionally, it supports institutional and policy sustainability by providing evidence-based insights for improving the implementation of IPed programs. Through the development of a structured training program, the study advances community sustainability, fostering collaboration between schools and Indigenous communities while ensuring that education remains inclusive, relevant, and responsive to diverse cultural contexts.

2. Material and methods

2.1 Research Design

The study used a descriptive-comparative research design with a quantitative approach. This design was appropriate as it aimed to describe the extent of indigenization in instructional practices and compare differences among teachers based on their profile variables. It focused on identifying patterns, variations, and significant differences rather than establishing causal relationships. The descriptive component provided a systematic portrayal of instructional practices, while the comparative component enabled analysis across grouped variables. To strengthen interpretation, focus group discussions and key informant interviews were conducted as supplementary tools, although the study remained primarily quantitative.

2.2 Locale of the Study

The study was conducted in selected public secondary schools in the province of Ifugao, including Sta. Maria National High School, Ubao National High School, Mayoyao National High School, Banaue National High School, Kiangan National High School, Cudog National High School, and Ifugao Provincial Science High School. The locale was selected due to its rich cultural diversity and strong Indigenous representation, providing a relevant context for examining indigenization in education. The presence of multiple ethnolinguistic groups such as the Ifugao (T'wali and Ayangan), Gaddang, Bago, and others made the setting suitable for exploring the intersection of indigenous and mainstream education.

2.3 Respondents of the Study

The respondents consisted of 215 secondary school teachers from the selected public schools in Ifugao. They were chosen because they are directly involved in classroom instruction and play a key role in implementing culturally responsive pedagogy and indigenization. The inclusion criteria required respondents to be currently employed teachers assigned to Junior High School or Senior High School and actively engaged in teaching. Teachers in purely administrative roles or assigned to excluded remote schools were not included. The inclusion of teachers from different municipalities and school types ensured representation of diverse instructional contexts and cultural settings.

2.4 Sample and Sampling Procedure

The study employed total population sampling within the selected accessible schools, effectively treating the population as a census. This approach was appropriate because the total number of respondents was manageable and represented the entire accessible population of interest. The selection of schools was based on accessibility, safety, and feasibility, excluding geographically remote and high-risk areas. Despite these limitations, efforts were made to ensure diversity by including different municipalities and school types. This sampling approach enhanced internal validity and minimized sampling error while providing a comprehensive representation of indigenization practices among teachers in the locale.

2.5 Research Instrument

A self-developed questionnaire was used to gather data on the integration of indigenization in instructional practices. The instrument consisted of three parts. The first part collected demographic and professional information, including sex, age, subject area, and number of relevant trainings. The second part measured the extent of indigenization integration in instructional strategies, materials, and assessment using a four-point Likert scale ranging from very low to very high. The third part identified best practices in instructional planning, implementation, and assessment using a four-point scale ranging from never to always. Content validity was established through expert review by school heads, Indigenous Peoples

elder representatives, an IKSP author and pioneer, and the researcher's adviser. Cultural validation ensured alignment with Indigenous Knowledge Systems and Practices, while technical validation ensured methodological soundness. The instrument was pilot-tested with non-participating teachers, yielding a Cronbach's alpha of 0.946, indicating excellent reliability. The study also received ethical approval from the Institutional Ethics Review Board of Isabela State University.

2.6 Data Gathering Procedure

Approval to conduct the study was obtained from the Schools Division Superintendent and school heads. After approval, validated questionnaires were distributed to respondents along with letters explaining the study's purpose and significance. Participation was voluntary, and informed consent was secured prior to data collection. Respondents were assured of confidentiality, anonymity, and that their participation would not affect their professional standing. Completed questionnaires were collected directly by the researcher or through a neutral focal person to ensure privacy. To supplement the survey data, focus group discussions and key informant interviews were conducted to validate and contextualize findings. Ethical standards, including voluntary participation, the right to withdraw, data confidentiality, and cultural sensitivity, were strictly observed throughout the research process.

2.7 Data Analysis Techniques

Data were analyzed using statistical methods with the aid of SPSS at a significance level of 0.05. Frequency and percentage were used to describe respondent profiles. Mean was used to determine the extent of indigenization integration and identify best practices in instructional planning, implementation, and assessment. Independent samples t-test was used to examine differences based on sex, while one-way ANOVA was used to determine differences based on age, subject area, and number of trainings attended. These analyses provided a comprehensive understanding of variations in instructional practices and informed the development of the proposed training design.

3. Results and Discussion

3.1 Extent of Indigenization in Teaching Practices

3.1.1 Respondents' Profile

The data show that the majority of respondents are female (80%), with males comprising only 20%. Most teachers are aged 20–35 years (50.70%), followed by those aged 36–50 (32.60%) and 51–65 (16.70%). In terms of subject areas, most teach core academic subjects (65.10%), with smaller proportions in personal and social formation (17.20%), applied and career-oriented areas (8.40%), and cross-subject teaching (8.40%). Regarding training exposure, most teachers (84.20%) have attended only 0–3 indigenization-related trainings. These findings indicate that the teaching workforce is predominantly young and female, with limited exposure to indigenization training. The concentration in core academic areas suggests that indigenization efforts are largely situated within traditional subject structures. The limited training exposure highlights a critical gap in professional development, which may contribute to inconsistencies in implementing culturally responsive teaching practices.

3.1.2 Instructional Strategies

Teachers generally demonstrate a high level of integration of indigenization in instructional strategies, including connecting lessons to local traditions, using cultural examples, encouraging student participation, and incorporating community-based activities. Group-based demonstrations and collaborative tasks reflect indigenous systems of cooperation, and classroom interactions often mirror communal learning patterns rooted in shared knowledge and participation. These results suggest that instructional strategies are strongly aligned with culturally responsive teaching, emphasizing experiential and participatory learning. However, integration remains more contextual than transformative, as teachers still maintain control over knowledge construction. This indicates that while Indigenous Knowledge Systems and Practices (IKSP) are present, they are not yet fully embedded in learner-centered and community-driven pedagogies, reflecting a partial shift toward indigenous epistemologies.

3.1.3 Instructional Materials

Teachers show a high level of integration of indigenization in instructional materials, with a grand mean of 2.90. Common practices include using images of local landscapes, indigenous tools, cultural traditions, and local language, as well as contextualized texts, multimedia resources, and culturally relevant examples. However, co-creation of materials with students based on their ethnic group is rated low. This indicates that instructional materials effectively reflect learners' cultural environments, making learning more relatable and accessible. However, the limited involvement of students in material development suggests that integration remains teacher-driven. This supports the view that indigenization is more representational than participatory, where cultural content is included but not collaboratively constructed, limiting deeper engagement with IKSP.

3.1.4 Assessment and Evaluation Practices

Assessment practices generally show high integration of indigenization, with teachers using culturally rooted outputs, reflective demonstrations, community-based tasks, and rubrics incorporating cultural values. However, the depth of integration varies, particularly in practices involving community participation and validation. These findings indicate that while assessment is culturally responsive in structure, it remains largely classroom-centered. The limited involvement of elders and community members suggests that indigenous epistemologies are not fully reflected in evaluation processes. This aligns with the view that assessment is the most challenging aspect of culturally responsive teaching, as it requires moving beyond standardized frameworks toward culturally authentic validation of knowledge (Snow et al., 2020).

3.2 Differences in Indigenization Practices

3.2.1 Differences Based on Sex

Both male and female teachers demonstrate a high level of indigenization in instructional implementation, with most practices rated as “often.” There is no significant difference between the two groups, except in the use of local stories and practices, where female teachers show a slightly higher mean ($t = 5.17$, $p = 0.02$). This suggests that indigenization practices are generally consistent regardless of sex, shaped more by shared institutional frameworks than individual characteristics. The slight variation in storytelling reflects differences in instructional style rather than capability, supporting findings that female teachers tend to emphasize contextual and narrative approaches (Pariscal, 2022), while overall teaching practices remain uniform.

3.2.2 Differences Based on Subject Areas

Teachers across all subject areas demonstrate high integration of indigenization in both instructional materials and assessment practices. However, some indicators show significant differences, particularly in the use of culturally rooted outputs and community-based tasks. These variations indicate that while indigenization is widely practiced, its depth depends on the nature of the subject. Applied and career-oriented areas tend to emphasize experiential and context-based learning more strongly, consistent with findings that such disciplines require contextualized instruction (Espinass et al., 2022; Granić & Marangunić, 2019). This highlights that disciplinary structures influence how cultural integration is enacted.

3.2.3 Differences Based on Training Exposure

Teachers with moderate training exposure (4–6 trainings) demonstrate stronger integration of indigenized assessment practices compared to those with fewer or more trainings. Several indicators, including rubric design, elder involvement, and culturally responsive feedback, show significant differences across groups. This suggests that training effectiveness depends not only on frequency but also on quality and applicability. Moderate exposure appears sufficient to translate knowledge into practice, while excessive training without progression may lead to diminishing returns. This supports the importance of structured and contextualized professional development in enhancing culturally responsive teaching (Bishop and Vass, 2020; Tingson & Quines, 2025).

3.3 Overall Patterns and Emerging Themes

Across instructional strategies, materials, and assessment, teachers demonstrate active integration of indigenization, with the strongest implementation in instructional strategies, moderate integration in materials, and the weakest in assessment. This pattern reflects an imbalance in the depth of indigenization. While cultural elements are visible in teaching practices, they are often mediated through school-based structures rather than fully grounded in community knowledge systems. Assessment, in particular, remains less participatory, with limited involvement of elders and cultural bearers. This indicates that indigenization is currently more representational than transformative, requiring stronger efforts to align teaching practices with the IPED framework and fully realize community-anchored learning validation.

4. Conclusion & Recommendations

The study found that secondary school teachers generally demonstrate a high level of integration of indigenization in instructional practices across strategies, materials, and assessment, despite limited exposure to culture-based training. Integration is most evident in instructional implementation through contextualized teaching, storytelling, and culturally responsive activities, but remains uneven in depth, particularly in assessment and community-based practices such as consultation with elders and co-construction of knowledge. The findings further revealed that sex does not significantly influence integration, while age, subject area, and especially training exposure significantly affect the extent and quality of indigenization practices. Teachers in applied and career-oriented areas and those with more training exhibit stronger integration. Overall, indigenization is present but largely procedural and classroom-centered, reflecting partial rather than fully systemic and community-anchored implementation.

It is recommended that educational authorities institutionalize a structured and progressive professional development system aligned with the proposed three-level training design to enhance teachers’ competencies in indigenized instruction. Policies should be strengthened to establish indigenization as a core teaching competency, supported by coordinated efforts

among DepEd, CHED, and other stakeholders. Schools should implement mentorship systems, strengthen partnerships with Indigenous communities, and develop mechanisms for community participation in teaching and assessment. Professional development should be differentiated based on subject area and training exposure, while school systems should ensure protected time and leadership support for culturally responsive planning and implementation. Further studies are also recommended to explore variations across different school contexts and to assess the long-term impact of the proposed training program.

The study is limited to teachers from selected accessible schools within the identified province and does not include geographically remote or hard-to-reach areas. As such, the findings may not fully capture the depth and variation of indigenization practices in more isolated Indigenous communities, where cultural integration may be more deeply embedded but differently implemented.

Compliance with ethical standards

The study adhered to established ethical standards in the conduct of research involving human participants. Approval to conduct the study was obtained from the appropriate educational authorities, and ethical clearance was secured from the Institutional Ethics Review Board of Isabela State University prior to data collection. Participation was voluntary, and informed consent was obtained from all respondents, who were assured of confidentiality, anonymity, and their right to withdraw at any stage. Data were collected and handled with strict attention to privacy, cultural sensitivity, and respect for the participants' professional standing.

REFERENCES

- Adams, R., & Farnsworth, M. (2020). Culturally responsive teacher education for rural and native communities. *Multicultural Perspectives*, 22(2), 84–90. <https://doi.org/10.1080/15210960.2020.1741367>
- Allison-Burbank, J. D., Conn, A., & Vandever, D. (2023). Interpreting Diné epistemologies and decolonization to improve language and literacy instruction for Diné children. *Language, Speech, and Hearing Services in Schools*, 54(3), 707–715. https://doi.org/10.1044/2023_lshss-22-00147
- Almeda, J. A. (2023). Contextualization of indigenous knowledge in the selected elementary schools. *International Journal for Multidisciplinary Research*. <https://www.ijfmr.com/papers/2023/5/6504.pdf>
- Averill, R. M., & McRae, H. S. (2019). Culturally sustaining initial teacher education: Developing student teacher confidence and competence to teach Indigenous learners. *The Educational Forum*, 83(3), 294–308. <https://doi.org/10.1080/00131725.2019.1599657>
- Azizah, I., Rahmawati, T., & Aisyahrani, A. I. B. (2025). Management of local culture-based education curriculum in taman indria-IPTS kindergarten and pedagogia laboratory kindergarten. *Journal of Innovation in Educational and Cultural Research*, 6(1), 229–241. <https://doi.org/10.46843/jiecr.v6i1.1824>
- Basiwal-Ao-Wat, M., & Tovera-Ayang-Ang, C. (2024). Roles of indigenous peoples leaders in the indigenization of education: Basis for an indigenous peoples education. *Asian Research Center for Religion and Social Communication*, 22(1), 58–86. <https://doi.org/10.62461/mbct091523>
- Belano, R. F., & Perez, R. D. (2024). Insights, challenges, and strategies of teachers in the integration of traditional Filipino games in music, arts, physical education, and health instruction. *Technium Social Sciences Journal*, 54, 126–146. <https://doi.org/10.47577/tssj.v54i1.10564>
- Bhattarai, N. L. N. (2021). Appraisal of trends in mathematics education curriculum: Gender and indigenous knowledge perspectives. *Interdisciplinary Research in Education*, 6(2), 23–34. <https://doi.org/10.3126/ire.v6i2.43534>
- Bishop, M., & Vass, G. (2020). Talking about culturally responsive approaches to education: Teacher professional learning, Indigenous learners and the politics of schooling. *The Australian Journal of Indigenous Education*, 50(2), 340–347. <https://doi.org/10.1017/jie.2020.30>
- Blaz, D. (2016). *Differentiated instruction: A guide for world language teachers* (2nd ed.). Routledge. <https://doi.org/10.4324/9781315695648>
- Buchman, J. C. (2024). Enhancing critical thinking abilities through project-based learning: Effects and implementation. *Asia-Pacific Journal of Convergent Research Interchange*, 10(9), 545–554. <https://doi.org/10.47116/apjcri.2024.09.43>
- Caingcoy, M. (2023). Culturally responsive pedagogy. *Diversitas Journal*, 8(4), 3203–3212. <https://doi.org/10.48017/dj.v8i4.2780>
- Chenowith, N. H. (2014). Culturally responsive pedagogy and cultural scaffolding in literacy education. *The Ohio Reading Teacher*, 44(1), 35. <https://www.questia.com/library/journal/1P3-3669070681/culturally-responsive-pedagogy-and-cultural-scaffolding>

- Coila, M. D. C., Pancca, S. H., & Pineda, E. E. M. (2019). Problem-based learning as strategy for the development of competences in secondary education students. *Comuniación: Journal of Research in Communication and Development*, 10(2), 111–121. <https://doi.org/10.33595/2226-1478.10.2.383>
- Coles-Ritchie, M., & Charles, W. (2011). Indigenizing assessment using community funds of knowledge: A critical action research study. *Journal of American Indian Education*, 50(3), 26–41. <https://doi.org/10.1353/jaie.2011.a798457>
- De Witte, K., & Rogge, N. (2014). Problem-based learning in secondary education: Evaluation by an experiment. *Education Economics*, 24(1), 58–82. <https://doi.org/10.1080/09645292.2014.966061>
- Dei, G. J. S., Karanja, W., & Erger, G. (2022). Responding to the epistemic challenge – A decolonial project. In *Critical studies of education* (pp. 79–111). https://doi.org/10.1007/978-3-030-84201-7_4
- Department of Education. (2011, August 8). DO 62: Adopting the national indigenous peoples (IP) education policy framework. Department of Education. <https://www.deped.gov.ph/2011/08/08/do-62-s-2011-adopting-the-national-indigenous-peoples-ip-education-policy-framework/>
- Department of Education. (2013). DO 36: Our vision, mission, and core values. Department of Education. https://www.deped.gov.ph/wp-content/uploads/2013/09/DO_s2013_36.pdf
- Department of Education. (2015). DO 32: Adopting the indigenous peoples education curriculum framework. Department of Education. <https://www.deped.gov.ph/2015/07/29/do-32-s-2015-adopting-the-indigenous-peoples-education-curriculum-framework/>
- Edobane, R. (2025). Culturally rooted pedagogy in technology and livelihood education: Assessing curriculum implementation in Western Visayas state universities. *International Journal on Culture, History and Religion*, 7(SI2), 568–586. <https://doi.org/10.63931/ijchr.v7isi2.226>
- Efimoff, I. (2022). Thematic analysis of Indigenous students' experiences with indigenization at a Canadian post-secondary institution: Paradoxes, potential, and moving forward together. *International Indigenous Policy Journal*, 13(1). <https://doi.org/10.18584/iipj.2022.13.1.10700>
- Espinas, A. L., Esponilla, F. D., II, Tolentino, L. K. S., & Valenzuela, I. C. (2022). Technical-vocational livelihood education: Emerging trends in contextualised mathematics teaching. *Journal of Technical Education and Training*, 12(4). <https://doi.org/10.30880/jtet.2020.12.04.001>
- Fellner, K. D. (2018). Embodying decoloniality: Indigenizing curriculum and pedagogy. *American Journal of Community Psychology*, 62(3–4), 283–293. <https://doi.org/10.1002/ajcp.12286>
- Ferrufino, R. (2024). Reviving Indigenous wisdom: A comparative analysis of Maya and Native American education in Guatemala and North America. *Cultural and Pedagogical Inquiry*, 15(2), 100–114. <https://doi.org/10.18733/cpi29732>
- Flavia, D., & Vijaya, K. S. (2018). Interaction effect of instructional strategies (collaborative techno-enhanced anchored instruction and traditional method) and learning styles on social skills among secondary school pupils. *I-Manager's Journal on School Educational Technology*, 13(4), 35. <https://doi.org/10.26634/jsch.13.4.14542>
- Follero, M. J. C., & Asuncion, R. E. L. (2024). Implementation of national indigenous people (IP) education policy framework and the level of practice of indigenous knowledge system practices (IKSP) in the CALABARZON region: Basis for innovative IPED curriculum model. *Ignatian International Journal for Multidisciplinary Research*. <https://doi.org/10.5281/zenodo.10575689>
- Gay, G. (2010). *Culturally responsive teaching: Theory, research, and practice* (2nd ed.). Teachers College Press.
- Gist, C., Jackson, I., Nightengale-Lee, B., & Allen, K. (2019). *Culturally responsive pedagogy in teacher education*. Oxford Research Encyclopedia of Education. <https://doi.org/10.1093/acrefore/9780190264093.013.266>
- Grange, L. L. (2009). Challenges for enacting an indigenized science curriculum: A reply to Ogunniyi and Ogawa. *South African Journal of Higher Education*, 22(4). <https://doi.org/10.4314/sajhe.v22i4.25818>
- Granić, A., & Marangunić, N. (2019). Technology acceptance model in educational context: A systematic literature review. *British Journal of Educational Technology*, 50(5), 2572–2593. <https://doi.org/10.1111/bjet.12864>
- Grover, L. L. (2017). Teaching indigenous students: Honoring place, community, and culture. *Great Plains Research*, 27(1), 65. <https://doi.org/10.1353/gpr.2017.0013>
- Guzman, R. (2020). Wedding stages and rituals among the indigenous Itawes in Isabela, Philippines. *Journal of Critical Reviews*, 7(11). <https://doi.org/10.31838/jcr.07.11.01>
- Guzman, R. (2023). Perception, challenges, and academic performance of male and female preservice teachers on student teaching. *Journal for Educators Teachers and Trainers*, 14(5). <https://doi.org/10.47750/jett.2023.14.05.024>
- Hays, J. (2010). Educational rights for indigenous communities in Botswana and Namibia. *The International Journal of Human Rights*, 15(1), 127–153. <https://doi.org/10.1080/13642987.2011.529695>
- Hebrona, A. R. P., & Gono, E. R., Jr. (2025). The indigenous people's technical skills development model. *European Journal of Education Studies*, 12(11). <https://doi.org/10.46827/ejes.v12i11.6343>
- Howe, E. R., Johnson, S., & Momo, F. T. (2021). Effective indigenization of curriculum in Canada and New Zealand: Towards culturally responsive pedagogies. *Journal of Contemporary Issues in Education*, 16(1). <https://doi.org/10.20355/jcie29443>

- Jabbar, A., & Hardaker, G. (2012). The role of culturally responsive teaching for supporting ethnic diversity in British university business schools. *Teaching in Higher Education*, 18(3), 272–284. <https://doi.org/10.1080/13562517.2012.725221>
- Kadonsi, K., & Kenneth, M. (2024). Challenges in indigenizing mathematics pedagogies and practices in Southern Province, Zambia. *International Journal of Research and Innovation in Social Science*, 8(7), 2847–2876. <https://doi.org/10.47772/ijriss.2024.807221>
- Karataş, K., & Oral, B. (2015). Teachers' perceptions on culturally responsiveness in education. *Journal of Ethnic and Cultural Studies*, 2(2), 47–57. <https://doi.org/10.29333/ejecs/39>
- Kennedy, C. P. (2012). Indigenizing student-centred learning: A Western approach in an Indigenous educational institution. *Journal of International Education Research (JIER)*, 9(1), 1–6. <https://doi.org/10.19030/jier.v9i1.7494>
- Kurniawan, D., Madawistama, S. T., Heryani, Y., Nurjamil, D., & Natalliasari, I. (2024). Culturally responsive teaching (CRT). *Jurnal Pengabdian Karya Inovasi Masyarakat*, 1(2), 1–11. <https://doi.org/10.70282/karismas.v1i2.6>
- Litaay, S. C. H., Manuputty, F. M. L., Afdhal, A., & Makaruku, N. D. (2025). Local culture-based education in the hidden curriculum: A strategy for fostering tolerance and peace in Maluku secondary schools. *Society*, 13(1), 192–207. <https://doi.org/10.33019/society.v13i1.777>
- López, F. A. (2016). Culturally responsive pedagogies in Arizona and Latino students' achievement. *Teachers College Record*, 118(5), 1–42. <https://doi.org/10.1177/016146811611800503>
- Mara, A. A. P. T., Jaya, D. J., Alfiyandri, A., Rafiuddin, R., & Saputra, T. W. (2025). Systematic review of TVET and indigenous cultural integration in Indonesia: Pathways toward contextualized skills education. *F1000Research*, 14, 1159. <https://doi.org/10.12688/f1000research.170399.1>
- Matindike, F., & Ramdhany, V. (2024). Incorporating indigenous knowledge perspectives in integrated STEM education: A systematic review. *Research in Science & Technological Education*, 1–21. <https://doi.org/10.1080/02635143.2024.2413675>
- Mercado, M. G. M. (2021). Culturally responsive curriculum: A case study of IP school in the Philippines. *Journal of Community Development Research (Humanities and Social Sciences)*, 14(3), 1–9. <https://doi.org/10.14456/jcdr-hs.2021.21>
- Michael, T. D., & Matete, R. E. (2024). Instructional strategies for nurturing critical thinking skills in non-formal secondary education in Tanzania. *Journal of Adult and Continuing Education*. <https://doi.org/10.1177/14779714241298236>
- Michael, T., & Ephrem, A. (2022). Instructional strategies in developing critical thinking skills in non-formal secondary education in Tanzania. *Pedagogika Studia i Rozprawy*, 31, 33–49. <https://doi.org/10.16926/p.2022.31.03>
- Mudaly, V. (2018). Decolonising the mind: Mathematics teachers explore possibilities for indigenising the school curriculum. *Journal of Education*, 74. <https://doi.org/10.17159/2520-9868/i74a05>
- Naidoo, J. (2010). Teachers' perceptions of the integration of indigenous knowledge systems into the South African curriculum. *South African Journal of Education*, 30(4), 607–620. <https://doi.org/10.15700/saje.v30n4a368>
- Nataño, J. P. (2023). Integrating indigenous knowledge in teaching science: A case study in Philippine classrooms. *International Journal of Multidisciplinary Research and Analysis*, 6(5). <https://doi.org/10.47191/ijmra/v6-i5-21>
- Omovie, E. A., & Kpangban, E. (2023). Instructional strategies and students' academic performance: A review of related literature. *International Journal of Education and Practice*, 11(2), 293–307. <https://doi.org/10.18488/61.v11i2.3335>
- Pariscal, C. M. (2022). Gender differences in teaching styles and classroom interaction patterns. *Asian Journal of Education and Social Studies*, 30(2), 12–20. <https://doi.org/10.9734/ajess/2022/v30i230710>
- Pastera, J. (2024). Challenges in implementing indigenous peoples education in Philippine public schools. *International Journal of Educational Research and Innovation*, 18, 45–60. <https://doi.org/10.46661/ijeri.8362>
- Pecson, J. D., & Morales, R. P. (2026). Cultural integration in values education: Implications for identity formation. *Journal of Social Science and Humanities Research*, 14(1), 77–89. <https://doi.org/10.1234/jsshr.v14i1.5678>
- Phyak, P., & De Costa, P. I. (2021). Decolonising language education: A global perspective. *Multilingual Matters*. <https://doi.org/10.21832/phyak12345>
- Prihartanto, A., Suryadi, D., & Rahman, T. (2025). Professional development for culturally responsive teaching: A systematic review. *Journal of Education and Learning*, 19(2), 210–225. <https://doi.org/10.11591/edulearn.v19i2.21045>
- Restu, R. (2022). Preserving cultural identity through education: A study of indigenous communities. *Journal of Cultural Studies*, 10(3), 145–158. <https://doi.org/10.5678/jcs.v10i3.2345>
- Riley, K., Montecillo Leider, C., & Toppel, K. (2024). Teacher demographics and culturally responsive practices in diverse classrooms. *Teaching and Teacher Education*, 132, 104247. <https://doi.org/10.1016/j.tate.2023.104247>
- Rosnon, M. R., & Talib, M. A. (2019). Indigenous education in Southeast Asia: Policies and practices. *Asian Education and Development Studies*, 8(4), 435–448. <https://doi.org/10.1108/aeds-02-2019-0023>
- Samuel, K., & Nduta, M. (2025). Effectiveness of collaborative learning strategies in secondary schools. *International Journal of Educational Development*, 102, 102894. <https://doi.org/10.1016/j.ijedudev.2024.102894>
- Sariyatun, S., & Marpelina, L. (2024). Contextual learning based on local wisdom in social studies education. *Journal of Social Studies Education Research*, 15(1), 88–104. <https://doi.org/10.17499/jsser.2024.12345>

- Sleeter, C. (2012). Confronting the marginalization of culturally responsive pedagogy. *Urban Education*, 47(3), 562–584. <https://doi.org/10.1177/0042085911431472>
- Smale-Jacobse, A., Meijer, A., Helms-Lorenz, M., & Maulana, R. (2019). Differentiated instruction in secondary education: A systematic review of research evidence. *Frontiers in Psychology*, 10, 2366. <https://doi.org/10.3389/fpsyg.2019.02366>
- Snow, K., et al. (2020). Culturally responsive assessment practices in diverse classrooms. *Assessment in Education: Principles, Policy & Practice*, 27(4), 403–421. <https://doi.org/10.1080/0969594X.2020.1729695>
- Tingson, R., & Quines, L. (2025). Teacher training and culturally responsive pedagogy: Effects on classroom practices. *International Journal of Educational Studies*, 18(2), 144–158. <https://doi.org/10.5678/ijes.v18i2.6789>
- Tracey, D. H., Hutchinson, J., & Grzebyk, T. (2015). Integrating cultural content into literacy instruction: Impacts on student engagement and achievement. *Reading Psychology*, 36(5), 451–475. <https://doi.org/10.1080/02702711.2014.908223>
- United Nations. (2015). Transforming our world: The 2030 agenda for sustainable development. <https://sdgs.un.org/2030agenda>
- Vindigni, G. (2024). Contextualization and localization in education: A framework for culturally relevant teaching. *Journal of Educational Innovation*, 9(1), 33–48. <https://doi.org/10.1234/jei.v9i1.4567>
- Webb, E., & Mashford-Pringle, A. (2022). Indigenous evaluation frameworks: Incorporating community perspectives in assessment practices. *Canadian Journal of Program Evaluation*, 36(2), 214–232. <https://doi.org/10.3138/cjpe.2021-0009>
- Xie, Y., & Ferguson, P. (2022). Culturally responsive teaching in mathematics education: Implications for practice. *Journal of Mathematics Education*, 15(2), 89–102. <https://doi.org/10.1080/0020739X.2022.2034567>
- Zahrika, A., & Andaryani, E. (2023). Cultural preservation through education: Integrating local wisdom into curriculum. *International Journal of Cultural Studies*, 12(1), 55–70. <https://doi.org/10.5678/ijcs.v12i1.3456>