

Cultivating sustainability through indigenous literacy: A SWOT analysis

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Abstract

Sustainability is the goal of every entity requiring a holistic approach that considers the interconnectedness of environmental, economic, and social factors. It's a dynamic process that necessitates continuous adaptation and collaboration among individuals, communities, businesses, and governments. Sustainable Development Goals of 2030 were formulated to improve people's lives regardless of race, ethnicity, and socio-economic status. Since time immemorial, the Indigenous people have been among the most vulnerable, marginalized, illiterate, and exploited sectors of society, thus, implementing intervention for their development could be a great contribution to attaining the SDGs. The Mindoro State University in collaboration with Mansalay local government unit planned to conduct a 5-year community development program. To ensure an effective and sustainable program, a SWOT analysis was conducted to determine the internal attributes (strengths and weaknesses), and external factors (opportunities and threats) that could be used in formulating a strategic plan for the development of the indigenous community in Mansalay, Oriental Mindoro in the Philippines. This study was part of the SWOT analysis and was focused on identifying the literacy level of the community. The research design utilized was ethnography through community immersion, survey, interview, and focus group discussions. The findings showed that there are professional teachers in the community, however, some elders are illiterate, and some are working instead of attending schools. The findings recommend conducting a literacy drive, especially for elders. As a way forward, the results of the study were integrated into the extension project for the College of Teacher Education.

Keywords: *literacy, sustainability, indigenous people, SWOT analysis, Hanunuo Mangyan, needs assessment*

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1. Introduction

There are approximately 370 million indigenous people in the world representing thousands of languages and cultures (Recio & Hestad, 2022). They hold unique knowledge systems and practices for sustainable management of natural resources (Senanayake, 2006; Camacho et al., 2015; Magni, 2017; Redvers et al., 2023; Berhane, 2024; Macusi, 2023; Ulluwishewa et al., 2008; Bansal et al., 2023; Brondízio et al., 2021). Indigenous people and their civilizations have contributed greatly to the world's diversity through their fundamental interdependence between the abundance of plant and animal species and culturally based resource management practices (Kalafatic, n.d.; Obiero et al., 2023; Jessen et al., 2021; Imoro et al., 2021; Dominique et al., 2018). Their culture and traditions have had to withstand the social and cultural challenges. They have practiced sustainability for centuries (Kanene, 2016; Johnson et al., 2016; Sangha, 2020) and have been an effective steward of the environment (Recio & Hestad, 2022).

The Philippines is home to many indigenous people, among them is the natives of Mindoro called Mangyan. Mangyan is comprised of eight sub-groups the Alangan, Bangon, Buhid, Hanunuo, Iraya, Ratagnon, Tadyawan, and Tau-buhid (Fansler, 2018). This study focused on one of the seven tribes of Mangyan – the Hanunuo. Hanunuo can be found in the mountainous area of the southern part of Oriental Mindoro. They have their script called Surat Mangyan and are known for their chanted poetry called Ambahan. Just like other indigenous communities, they are among the poorest of the poor, underprivileged, and illiterate. To help them improve their lives, their rights must be recognized, protected, and promoted (Republic Act No. 8371) and the state must ensure inclusivity in education, health, and other services. However, despite the efforts of the state and the Department of Education (DepEd) to provide inclusive education, various factors contributed to the high illiteracy among indigenous people, especially the elders. Among them are geographical challenges (Hossen et al., 2023), low human resources (Gigler, 2009), and diverse vernacular languages (Yawan, 2022). Thus, effective planning and teaching practices embedded with cultural awareness are crucial in addressing the issues (Nakata, 2003).

Education in general, is critical for promoting sustainable development and improving the capacity of the people to address environment and development issues (UNCED, 1992). Literacy is essential in building a sustainable community (Santos, 2020; Correia et al., 2010).

It plays a vital role in building the environment for the sustainable acquisition of knowledge and skills (Opoku, 2018). It also helps in promoting sustainable well-being (Turkki, 2015) as it underscores the importance of scientific literacy in fostering education for sustainability (Correia et al., 2010). Sustainable development is the end goal of the United Nations' plan for the planet, and many countries have agreed to achieve the sustainable development goals (Bexell & Jönsson, 2017). Sustainable Development Goals (SDG) of 2030 aims to promote a sustainable environment for every generation (Emina, 2021), achieve a level of development that is sustainable and bring lasting socio-economic benefits to all people and the environment (Szymańska, 2021). The SDGs of 2030 hope among indigenous people communities that their priorities, concerns, and rights will be recognized (Henriksen, 2016). Thus, an inclusive program should be implemented at the grassroots to realize the goals by 2030.

Addressing the concerns of the indigenous community in line with the achievement of the SDGs, this study aims to assess the Hanunuo community within the grassroots level through SWOT analysis. The main purpose of the study is to determine key elements needed and could help in the community development of indigenous people in the highlands of Southern Luzon in the Philippines. Through the conduct of SWOT analysis, the community was allowed to assess their strengths, weaknesses, opportunities, and threats empowering them over development decisions. The collaboration between and among the Hanunuo Mangyans, the local government unit, and academe created a systematic formulation of the program for community development. The literature emphasizes the importance of participative assessment and planning and utilizing culture-sensitive and culture-responsive programs to ensure the sustainability of community development projects. The facilitator like academe was found to play a significant role in mediating among the stakeholders and facilitating capacity enhancement. Thus, the research was conducted for Mindoro State University to fulfill its mandate – instruction, research, extension, and production. Specifically, this study aims to answer the following questions:

1. What attribute/s does the community excel in and separates it from other communities about cultural identity? (Strengths)
2. What are the areas that hinder the development of the cultural identity of the community? (Weaknesses)
3. What are the favorable external factors that could help preserve the culture of the community? (Opportunities)

4. What are the external factors that have the potential to negatively affect the culture of the community? (Threats)

2. Literature Review

2.1 Indigenous People

Indigenous people are distinct from their historical, socio-cultural, and political characteristics. They possess their language, cultural tradition, land, and territory and have self-identity as indigenous (Cobo, 2004). They have their unique social organization, governance structure, institution and customary laws, and collective and historical ties to their ancestral territories (Kalafatic, n.d.). Their knowledge, beliefs, and practices were passed from their ancestors to the younger generations through the practice of oral traditions like storytelling, singing, reciting poems, and epic chants (Hoebel, 1954), rituals, and festivals (Bawagan, 2009).

Throughout history, indigenous people have faced discrimination, dominated, and marginalized (Anaya, 2009) geographically, socially, politically, and economically (Jennings, 2017). They remain among the poorest (United Nations, 2010) and most disadvantaged because they are still practicing their pre-colonial culture and practices (Bamba et al., 2021). They suffer from environmental degradation, destruction of biological and cultural diversity, militarization, and violence (Kalafatic, n.d.), and the economic effects of colonialism, industrialization, and globalization (Jennings, 2017). Despite all of these, they pursue self-determination to co-exist and determine their pathways for economic, social, and cultural development (Kalafatic, n.d.).

In the Philippines, there are 112 ethnolinguistic groups estimated to be 14-17 million which constitute 10% - 20% of the total population of 100,981,437 (Philippine Statistics Office, 2016). Like many other indigenous groups worldwide, they have preserved their traditional practices and beliefs over time (Bawagan, 2009). In the MIMAROPA Region alone, there are at least 700,000 indigenous people and 100,000 of them are Mangyan who reside on the island of Mindoro (Fajardo, 2007). The Mangyans are the indigenous ethno-linguistic group that is composed of eight sub-groups known as Alangan, Bangon, Buhid, Hanunuo, Iraya, Ratagnon, Tadyawan, and Tau-buhid (Fansler, 2018). They are mostly farmers, and their customs and traditions are linked to their agricultural activities (Valera, & Visco, 2015). They value close family ties and ethnocentrism while taking for granted formal education especially higher education (Aclan et al., 2021). Each tribe has distinct customary laws and indigenous leadership

(Sy-Luna & Diaz, 2023; Zhang et al., 2012). They observe “Batas Mangyan” (Mangyan laws) in resolving conflict among them. Martinez (1999) pointed out that they use Batas Mangyan to define proper behavior, provide protection, empower the elders to resolve conflicts and pass judgment on the guilty, and is a mechanism to maintain peace and order in the community. They all regarded their community elder locally known as “gurangon” as a major figure in decision-making, and a valuable source of indigenous knowledge, and oral histories (Sy-Luna & Diaz, 2023).

2.2 Indigenous Literacy

Literacy, ability to process and understand written and spoken information (Saigian, 2020), helps individuals grasp the deep meaning and substance of communication (Keefe & Copeland, 2011). Since it refers ability to think critically and creatively, it also helps improve a person’s cognitive ability by gaining information from what is read and heard (Rintaningrum, 2019). While it is commonly referred to being “able to read and write,” it now includes the competencies related to cultural practices, and social, and political issues (Saigian, 2020).

While literacy is fundamental to every individual, there is still a prevalence of illiteracy, especially among the indigenous people (Rheault et al., 2019; Guiberson & Vining, 2023). In the study of McGlusky et al. (2006), it was found that the lack of literacy and numeracy skills among indigenous people serve as barriers to development. Literacy is a challenging task for the teachers especially in integrating pedagogical strategies because of the diverse needs of the indigenous people (Protacio, 2021). Aside from pedagogical challenges, teachers are confronted with psycho and socio-linguistic difficulties (Hamel, 2016). To address the prevalence of illiteracy and mitigate its effects, a support system for indigenous literacy must be organized and implemented. Such support services must be culturally responsive (Balatti et al., 2004) yet still produce meaningful outcomes for the students (Robinson & Hughes, 1999).

The best practice in indigenous education involves flexible, innovative, adaptable, and supportive delivery (Marika et al., 2004). In this sense, basic or adult literacy may be conducted in indigenous communities. It should be a collaborative approach, one which encourages solutions to be around the institute, rather than marginalizing students, teachers, or support services (Balatti et al., 2004). In implementing literacy programs, there is a need for secure, ongoing funding (Govender, 2000). It is also essential to have a deeper understanding of the pedagogical gaps and struggles in literacy enhancement as well as the concept of inter-

culturality to address the needs of ethnic and marginalized groups (Bastida et al., 2022).

2.3 SWOT Analysis

Strengths, weaknesses, opportunities, and threats (SWOT) analysis is widely used in analyzing the internal and external environments of an organization (Rozmi et al., 2018). SWOT recognizes the importance of internal and external aspects in attaining the goals of any business or organization (Bull et al., 2016). The internal factors being assessed are the strengths and weaknesses. Strengths are internal elements that can help in attaining the goal, while weaknesses are internal attributes that may interfere with organizational success (Aldehayyat & Anchor, 2008). The external environments that may affect an organization are evaluated in terms of the opportunities and threats. Opportunities are external aspects that could help an organization reach its goals, while the external factors that are considered potential barriers to reaching its goals are threats (Lee & Lin, 2008).

SWOT analysis has been used in many different fields such as education, industry, and agriculture (Benzaghta et al., 2021). It is effective in organizational strategies (Chermack & Kasshanna, 2007) and found to be helpful in strategic thinking (King, 2004). Both academics and practitioners have employed SWOT as a strategic planning technique to investigate organizations' positions, and accordingly develop their strategies (Benzaghta et al., 2021). In education, SWOT analysis was used by educators to address issues related to curriculum, pedagogy, facilities, modernization, and technology among others (Akhavan-Kazemi, 2005).

3. Methodology

3.1 Research Design

This study aims to formulate strategies for the literacy development of the indigenous community in the highlands of Southern Luzon, Philippines. The SWOT analysis is the most appropriate tool to use because it is the primary element of the strategic planning process (Fuentes et al., 2020). To address the specific objectives of the study, qualitative research employing ethnography design was utilized. Ethnography is a systematic exploration of the "social and cultural life of communities, institutions, and other settings" (LeCompte & Schensul, 2010, p.1), which aims to view cultural phenomena from the local perspective (Liang, 2022). To be able to describe the cultural phenomenon in depth, the fieldwork is

required for the researcher to be fully immersed in the local context (Fetterman, 2010). Immersion with the local community is needed to systematically learn and analyze the structures and forces within the community (Mendoza, 2007); just as important is documenting what is happening in natural ways (LeCompte & Schensul, 2010). The role of the researchers is to co-create knowledge not as experts (Campbell & Lassiter, 2015). Considering the unique characteristics of ethnography, a community immersion was done by the researcher while gathering data from participatory observation, interviews, and focus group discussions.

3.2 Research Locale

The study was conducted at Panaytayan, Mansalay, Oriental Mindoro in the Philippines. The province of Oriental Mindoro is in the eastern part of the island of Mindoro. The island is known for the indigenous group collectively known as Mangyan. The Mangyan group is subdivided into eight tribes such as Alangan, Bangon, Buhid, Hanunuo, Iraya, Ratagnon, Tadyawan, and Tawbuhid (Guterrez & Aplaon, 2020) each having its language and culture. This study was conducted at Mansalay, Oriental Mindoro, a second-class municipality in the southern part of the province. Among the municipalities of the province, Mansalay has the largest population of Mangyan, most of them living in the highlands. The community where the study was conducted is inhabited by the Hanunuo community with a total population of 551.

3.3 Population and Sampling

Of the total community members, 103 of them are elders locally referred to as “gurangon”. To select the participants of the study, purposive sampling was used. The criteria for selection are as follows: agree to participate in the study, can understand and speak Filipino, are at least 50 years old, and are part of the community decision-making body. Based on the criteria, 18 were selected as the participants of the study.

3.4 Research Instrument

The data gathering tools used in the study are observation, interview guide, and guide questions for FGD. To ensure that the observation is systematic and thorough, the observation matrix adapted from Liang (2019) was used. Meanwhile, the interview guide and FGD guide questions were validated by three experts to ensure that they measure what it purports to measure.

In the presentation of the results of the SWOT analysis, the TOWS (Threats, Opportunities, Weaknesses, and Strengths) matrix or situational analysis was used. This matrix

is constituted by the concepts of strategic planning (Wehrich, 1982). This can help in determining how strengths and weaknesses be matched with opportunities and threats to come up with the most appropriate strategy for the organizational development. Based on the matrix, planners may formulate four strategies; SO (strengths – opportunities), ST (strengths – threats), WO (weaknesses – opportunities), and WT (weaknesses-threats) (David et al., 2019).

Table 1

TOWS strategic alternatives matrix

	Internal Strengths (S)	Internal Weaknesses (W)
External Opportunities (O)	SO strategies (maxi-maxi) enable an organization to use its strengths to maximize its opportunities (Aggressive Strategy)	WO strategies (mini maxi) focus on improving the organization's internal weaknesses by capitalizing on its opportunities. (Turnaround Strategy)
External Threats (T)	ST strategies (maxi-mini) utilize its internal strengths to mitigate the impact of threats in the external environment. (Diversification Strategy)	WT strategies (mini-mini) minimize the weaknesses and threats facing the organization. (Defensive Strategy)

Source: Wehrich, 1982

3.5 Data Gathering Procedures

The data collection method used in the study is participatory observation in the form of community immersion and site inspection. The researcher stayed with the community to observe their activities, practices, culture, and traditions. Through community immersion, the researcher was able to learn the issues and problems in the community by experience rather than in secondary data which helped in identifying and prioritizing community problems (Mendoza, 2007). Aside from observation, interviews were also conducted with the four sitio (barangay district) leaders. They are the primary informants because they are considered the most knowledgeable by their community members. Meanwhile, focus group discussions were conducted with the remaining 14 participants to gather comprehensive details about the community.

3.6 Data Analysis

The research design used in the study is ethnography wherein the data were gathered through participatory observation, interviews, and FGD. Ethnographic data collection involves data that comes in various forms (Lichtman, 2013) and is gathered using various methods (Suter, 2012). Thus, data collection, analysis, and reporting are interrelated (Creswell, 2007). The gathered data were analyzed using Liang's (2022) model adapted from Le Compte and Schensul (2010). This model only includes five steps instead of the six-step model. The main data analysis procedure included: chunking data into conceptual categories; defining the terms; organizing the categories into themes; and interpreting the data (Liang, 2022). The trustworthiness of the study was established using triangulation, the researcher's positioning, members' checks, and field notes. The research was also peer-reviewed by some experts during the agency's in-house review.

3.7 Ethical Considerations

In considering research ethics, the following protocols were strictly followed by the researcher: seeking permission to conduct the study from the president and vice president for research and development of Mindoro State University; permission to visit the community from the local government unit, the indigenous people affairs, and military unit; permission to conduct interviews and FGD from community leaders; and informed consent from the participants. Confidentiality, anonymity, voluntary participation, privacy, security, and safety were all taken into consideration during the conduct of the study.

4. Findings and Discussions

Based on the observations, interviews, and FGD results, the SWOT analysis results are presented using the TOWS Matrix by Weihrich (1982) as shown in table 2. In assessing the internal attributes of the community, the result shows that its strength is having professional teachers in the community. Being indigenous people themselves, they dream that their community members become literate to have a better future. There are also college graduates in the community who serve as inspiration and motivation to others. The strong cohesion among community members is observed most of the time. This positive attribute motivates the researcher to develop a program for literacy development.

Table 2*TOWS matrix*

Strengths	Weaknesses
<ul style="list-style-type: none"> ❖ There are professional teachers in the community (S1) ❖ There are college graduates in the community (S2) ❖ There is a primary school in the community (S3) ❖ There is a strong cohesion among the community members (S4) 	<ul style="list-style-type: none"> ❖ Some learners work on the farm during school days (W1) ❖ Some gurangons are illiterate (W2) ❖ Limited food source (W3) ❖ Prevalence of underweight and stunting (W4) ❖ Prevalence of early marriage and teenage pregnancy (W5)
Opportunities	Threats
<ul style="list-style-type: none"> ❖ There are NGOs, and GAs that could help the community (O1) ❖ The local government unit employed locally funded teachers (O2) ❖ MinSU College of Teacher Education could provide a literacy program (O3) ❖ The DepEd – ALS can help in providing learning materials (O4) ❖ There is an existing zero illiteracy program that can deploy teachers to far-flung areas (O5) 	<ul style="list-style-type: none"> ❖ The road to school is unpaved, far, and risky (T1) ❖ One child died while 3 others nearly drowned while crossing the river to school (T2) ❖ There is an issue of insurgency (T3) ❖ Limited access to social and health services (T4) ❖ No access to electricity (T5)

As for the weaknesses of the community, it was observed that some of the learners are working on the farm during school days. Because of poverty, the community prioritizes their livelihood over education. Some elders are illiterate which is why they cannot teach their children to read and write too. There is a limited food source which also hinders children's studies indirectly. Malnutrition is also an issue to be considered. Based on the 2022 MIMAROPA Nutritional Situation, Mansalay, Oriental Mindoro records the highest prevalence of severe underweight to underweight and severe stunting to average stunting not only in the MIMAROPA region but in the whole Philippines. There is also a prevalence of early marriage and teenage pregnancy as their culture permits child marriage (as soon as a girl has her menstrual period) which leads them to stop schooling without being able to attend even high school grades.

Aside from identifying internal attributes, external factors should also be considered in formulating a strategic plan for community development. Among the external factors are the

opportunities that may potentially help the community. The identified opportunities include the possible collaboration of national government agencies and non-government organizations. The local government unit employed locally funded teachers who could teach in the community. The Department of Education – Alternative Learning System could also help by providing instructional materials for basic literacy and assessment for accreditation and equivalency. The Mindoro State University College of Teacher Education could conduct extension programs like basic literacy among adults and young people in the community. Finally, the Zero Illiteracy Program (ZIP) of the government could deploy teachers to far-flung areas through the collaboration of the Department of Labor and Employment, and local government offices.

When it comes to external factors that could harm the community or hinder its development, among the listed are unpaved and risky roads to school which pose threats to the children. An incident occurred when one child died and three others almost drowned while crossing the river to school. Such incidents send fear to parents and learners that no students from the sitio come to school for three months. There are still some concerns regarding insurgency. Living in a mountainous and far-flung area, the community became vulnerable and became victims of extortion and exploitation by rebel groups. Because of their geographical location, there is very limited access to social and health services. There is no electricity source or communication lines which makes development a challenge.

The presented SWOT analysis provided a concrete basis for the strategies used in the proposed community development program.

Literacy drive (maxi-maxi). A literacy drive may be conducted in the primary school of the community (S3) through the help of professional teachers (S1), college graduates (S2), Mindoro State University (O3), and the Zero Illiteracy Program (O5). The literacy program will not be limited to basic literacy but will also include adult, and financial literacy as well as early pregnancy awareness, family planning, personal hygiene, and proper grooming.

Accreditation and equivalency, and livelihood programs (mini-maxi). Since the community prioritizes livelihood over education (W1), livelihood programs may be offered through the assistance of NGAs like TESDA and NGOs such as the Bayi–Women’s Weavers Association (O1). That way the parents will be provided with extra income to support their children. Because some elders are illiterate (W2), and teenage mothers stop schooling (W5),

the Accreditation and Equivalency Program of DepEd ALS may help them earn elementary, or high school diplomas that can be used in attending technical or college courses.

Basic, social, and health services (maxi-mini). The strong community cohesion (S4) could be a means for soliciting basic, social, and health services through resolutions to private and government agencies. Due to far and risky roads (T1), there is limited access to services (T4), thus, the community could help in the transport of goods and services.

Collective responsibility (mini-mini). To minimize the weaknesses such as malnutrition (W4) and prevalence of teen pregnancy (W5) and threats facing the community such as insurgency (T3), and risky road (T1), the collaboration between and among the community, LGU, Mindoro State University, and other agencies should be established for the holistic development of the Hanunuo community in Panaytayan, Mansalay, Oriental Mindoro.

5. Conclusion

Among the strengths of the Hanunuo identified from the results of community immersion, participatory observations, interviews, and focus group discussions are the presence of professional teachers, college graduates, a primary school, and the strong cohesion among the community members. Their weaknesses include prioritizing livelihood over education, illiteracy among elders, malnutrition, and early marriage. On the other hand, there are various government agencies, non-government organizations, higher education institutions, and private individuals that could help in developing the literacy rate of the Hanunuo Mangyan. Lastly, the threats that could negatively affect the literacy development of the Hanunuo are the risky unpaved roads, insurgency, and limited access to basic, social, and health services.

It is important to take into consideration the internal attributes as well as the external factors before designing policy and projects to ensure that the programs to be implemented are appropriate and relevant to the community. Through the SWOT analysis conducted, the community members became participants not only in the conduct of the research but also in assessing their community potential. Community engagement is essential for ensuring that indigenous knowledge is incorporated into action plans in a culturally sensitive and respectful manner (Browne et al., 2016). This allows responsibility for community development and organization emanates from them.

Based on the TOWS matrix, literacy may be developed through literacy drive, accreditation and equivalency, and livelihood programs, provision of basic, social, and health services, and collective responsibility. As the results show, developing indigenous communities is challenging, and cultural practices should be taken into consideration. Thus, in formulating policies it must be culture-sensitive and inclusive. The integration of innovation and technology should be done in a way that could bring about sustainability, and resilience, yet with intact cultural integrity.

This study recommends the academe, government agencies, and non-government organizations take part in developing indigenous communities for the attainment of SDG 2030. The extension department of Mindoro State University may use the results of the study to develop a comprehensive literacy drive relevant to the needs of the community. The local government unit may consider the results of the study in policy and decision-making.

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References

- Aclan, E., Songcayawon, J., Ibañez, J., Acquioben, E., Torres, A.N., & Tji Beng, J. (2021). Alangan Mangyans' values that shape their young generation's thinking skills, technology use, and their relationship to the low landers: A Mini-ethnographic case study. *Advances in Social Science, Education, and Humanities Research*, 570, 1494-1501. <https://doi.org/10.2991/assehr.k.210805.236>
- Aldehayyat, J.S. & Achor, R. (22008). Strategic planning tools and techniques in Jordan: Awareness and use. *Strategic Change*, 17(7-8), 281-293. <https://doi.org/10.1002/jsc.833>
- Anaya, S.J. (2009). *Report of the special rapporteur on the situation of human rights and fundamental freedoms of Indigenous people*. Report on the Situation of Human Rights of Indigenous Peoples in Brazil. UN.

- Balatti, J., Gargano, L., Goldman, M., Wood, G. & Woodluck, J. (2004). *Improving indigenous completion rates in mainstream TAFTE: An action research approach*. NCVER, Adelaide.
- Bamba, J., Candelaria, C., Gabuya, R., & Manongdo, L. (2021). Community organizing for indigenous people in the Philippines: A proposed approach. *medRxiv*, 06.24.21259509. <https://doi.org/10.1101/2021.06.24.21259509>
- Bansal, S., Sarker, T., Yadav, A., Garg, I., Gupta, M. & Sarvaiya, H. (2023). Indigenous communities and sustainable development: A review and research agenda. *Global Business and Organizational Excellence, A Review of Research & Best Practices*, 43(4), 65-87. <https://doi.org/10.1002/joe.22237>
- Bastida, E.J., Saysi, J., Batuctoc, LV. (2022). Pedagogical struggles and gaps in language literacy enhancement: the case of indigenous people's education teachers in the Philippines. *International Journal of Curriculum and Instruction*, 15(1),142-165.
- Bawagan A. (2009). Customary justice system among the Iraya Mangyans of Mindoro. *Agham Tao*, 17, 14-28.
- Benzaghta, M.A., Elwalda, A., & Mousa, M.M. (2021). SWOT analysis applications: An integrative literature review. *Journal of Global Business Insights*, 6(1), 55-73. <https://www.doi.org/10.5038/2640-6489.6.1.1148>
- Berhane, A. T. (2024). Indigenous knowledge of Me'en Community toward natural resource conservation: a socio-philosophical analysis. *AlterNative: An International Journal of Indigenous Peoples*, 20(1), 55-66. <https://doi.org/10.1177/11771801241231638>
- Bexell, M., & Jönsson, K. (2017). Responsibility and the United Nations' Sustainable Development Goals. *Forum for Development Studies*, 44(1), 13-29. <https://doi.org/10.1080/08039410.2016.1252424>
- Brondízio, E.S., Aumeeruddy-Thomas, Y., Bates, P., Carino, J., Fernández-Llamazares, A., 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, 481-509. <https://doi.org/10.1146/annurev-environ-012220-012127>
- Bull, J., Jobstvogt, N., Böhnke-Henrichs, A., Mascarenhas, A., Sitas, N., Baulcomb, C., & Zähringer, J. (2016). Strengths, weaknesses, opportunities, and threats: A SWOT

- analysis of the ecosystem services framework. *Ecosystem Services*, 17, 99-111. <https://doi.org/10.1016/j.ecoser.2015.11.012>
- Camacho, L. D., Gevaña, D. T., Carandang, Antonio P., & Camacho, S. C. (2015). Indigenous knowledge and practices for the sustainable management of Ifugao forests in Cordillera, Philippines. *International Journal of Biodiversity Science, Ecosystem Services & Management*, 12(1–2), 5–13. <https://doi.org/10.1080/21513732.2015.1124453>
- Campbell, E. & Lassiter, L.E. (2015). *Doing ethnography today: Theories, methods, exercises*. Chichester, West Sussex: Wiley.
- Chermack, T.J., & Kasshanna, B.K. (2007). The use and misuse of SWOT analysis and implications for HRD professionals. *Human Resource Development International*, 10(4), 383-399. <https://doi.org/10.1080/13678860701718760>
- Cobo, J. (2004). *Study of the problem of discrimination against Indigenous people*. Final report by the Secretariat of Permanent Forum on Indigenous Issues.
- Correia, P.R.M., do Valle, B.X., Dazzani, M. & Infante-Malachias, M.E. (2010). The importance of scientific literacy in fostering education for sustainability: Theoretical considerations and preliminary findings from a Brazilian experience. *Journal of Cleaner Production*, 18(7), 678-685. <https://doi.org/10.1016/j.jclepro.2009.09.011>
- Creswell, J.W. (2007). *Qualitative inquiry and research design: Choosing among five approaches (2nd ed.)*. Thousand Oaks, CA: SAGE.
- David, F.R., Creek, S.A., & David, F.R. (2019). What is the key to effective SWOT analysis, including AQCD Factors? *SAM Advanced Management Journal*, 84(1), 25-32.
- Emina, K.A. (2021). Sustainable development and the future generations. *Social Sciences, Humanities and Education Journal*, 2(1), 57-71.
- Fajardo, R.R. (2007). *Still strangers in their own land*. from <http://pcij.org/indigenouspeople>
- Fansler, L.D. (2009). *Philippine halo-halo: The Mangyans of Mindoro*. Mangyan Heritage Center. <http://mangyan.org/content/philippine-halo-halo-mangyans-mindoro>
- Fetterman, D.M. (2010). *Ethnography: Step by step (3rd ed.)*. Thousand Oaks, CA: SAGE.
- Gigler, B. (2009). *Poverty, inequality and human development of indigenous peoples in Bolivia*. Working Paper Series No. 17
- Govender, E. (2000). *Working together: A co-operative approach to Aboriginal education*. A paper for the 2000 Australian Indigenous Conference, Canberra.

- Guiberson, M., & Vining, C. B. (2023). Language and literacy strategies for indigenous children: A scoping review. *Seminars in speech and language*, 44(1), 26–41. <https://doi.org/10.1055/s-0042-1758802>
- Hamel, RE. (2016). *Bilingual education for indigenous people in Mexico*. Bilingual and multilingual education. Switzerland: Springer, 395-406.
- Hoebel, E.A. (1954). *The Law of Primitive Man. A Study in Comparative Legal Dynamics*. MA: Harvard University Press.
- Hossen, M. S., Sohel, M. S., Horaira, G. A., Laskor, M. A. H., Sumi, A. B. A., Chowdhury, S., Aktar, S., Sifullah, M. K., & Sarker, M. F. H. (2023). Exploring barriers to accessing healthcare services for older indigenous people in the Chittagong Hill Tract, Bangladesh. *AIMS public health*, 10(3), 678–697. <https://doi.org/10.3934/publichealth.2023047>
- Imoro, Z.A., Imoro, A.Z., Duwiejuah, A.B. & Abukari, A. (2021). Harnessing indigenous technologies for sustainable management of land, water, and food resources amidst climate change. *Front. Sustain. Food Syst.*, 5,691603. <https://doi.org/10.3389/fsufs.2021.691603>
- Jennings, H. (2017). *Indigenous people & tourism*. Tourism Concern Research Briefing. <https://www.tourismconcern.org.uk>
- Jessen, T.D., Ban, N.C., Claxton, N.X. & Darimont, C.T. (2022). Contributions of Indigenous Knowledge to ecological and evolutionary understanding. *Frontiers in Ecology and the Environment*, 20(2), 93-101. <https://doi.org/10.1002/fee.2435>
- Johnson, J.T., Howitt, R., & Cajete, G. (2016). Weaving Indigenous and sustainability sciences to diversify our methods. *Sustain Sci*, 11, 1–11. <https://doi.org/10.1007/s11625-015-0349-x>
- Kalafatic, C. (n.d.). *Indigenous peoples' sustainable livelihood*. FAO (Food and Agriculture Organization of the United Nations) Livelihood Support Programme (2001-2007).
- Kanene, K.M. (2016). Indigenous practices of environmental sustainability in the Tonga community of southern Zambia. *Jamba (Potchefstroom, South Africa)*, 8(1), 331. <https://doi.org/10.4102/jamba.v8i1.331>
- LeCompte, M.D. & Schensul, J.J. (2010). *Designing and conducting ethnographic research: An introduction (2nd ed.)*. Lanham, MD: AltaMira.

- Lee, K.L., & Lin, S.C. (2000). A fussy quantified SWOT procedure for environmental evaluation of international distribution center. *Information Sciences*, 178(2), 531-549. <https://doi.org/10.1016/j.ins.2007.09.002>
- Liang, C.S. (2019). *Towards a missiological framework for responding to Chinese folk beliefs and practices: An ethnographic case study*. Unpublished Ph.D. thesis, Adventist International Institute of Advanced Studies, Silang, Cavite, Philippines.
- Liang, C.S. (2022). Ethnography in the Asian Context. In the S. Wa-Mbleka & A. Rosario (Eds.), *The SAGE Handbook of qualitative research in the Asian context*, (pp. 130-142). Thousand Oaks, CA: SAGE
- Litchman, M. (2013). *Qualitative education research: A user's guide (3rd ed.)*. Thousand Oaks, CA: SAGE.
- Macusi, E.S., Sales, A.C., Macusi, E.D., Bongas, H.P., Cayacay, M.A., Omandam, J.L., Schüler, M., & Vidal, C. (2023). Indigenous knowledge systems and practices (IKSPs), livelihood resources and aspirations of the Matigsalog and Ata Tribes. *Sustainability*, 15, 11182. <https://doi.org/10.3390/su151411182>
- Magni, G. (2017). Indigenous knowledge and implications for the sustainable development agenda. *European Journal of Education*, 52(4), 437-447. <https://doi.org/10.1111/ejed.12238>
- Martinez, R.Z. (1999). *Ideolohiya, kapangyarihan at ekolohiya: Nagbabagong Sistema ng pagmamay-ari ng lupang Iraya*. Unpublished Dissertation, University of the Philippines, Quezon City, Philippines.
- McGlusky, N., & Thaker, L. (2006). *Literacy support for indigenous people: Current systems and practices in Queensland*. Adelaide, SA: National Center Vocational Education Research.
- Obiero, K.O., Klemet-N'Guessan, S., Migeni, A.Z. & Achieng, A.O. (2022). Bridging Indigenous and non-Indigenous knowledge systems and practices for sustainable management of aquatic resources from East to West Africa. *Journal of Great Lakes Research*, 49(1), 128-S137. <https://doi.org/10.1016/j.jglr.2022.12.001>
- Opoku, A., & Egbu, C. (2018). Students' perspectives on the relevance of sustainability literacy in a postgraduate built environment program. *International Journal of Construction Education and Research*, 14(1), 46-58. <https://doi.org/10.1080/15578771.2017.1286417>

- Philippine Statistics Office (2016). *Philippine population census*. Republic of the Philippines. <https://www.psa.gov.ph/sites/default/files/attachments/gad/article/2015%20PSA%20Annual%20Report.pdf>
- Protacio, A. (2021). *Culturally diverse students' lived experiences in English as language of instruction* (GE-JD21). GLOBUS. <https://globusedujournal.in/wp-content/uploads/2021/11/GE-JD21-Adrian-V.-Proatacio.pdf>
- Recio, E., & Hestad, D. (2022). *Indigenous peoples: Defending an environment for all. Still only one earth: Lessons from 50 years of UN sustainable development policy*. International Institute for Sustainable Development. <https://www.bit.ly/still-only-one-earth>
- Redvers, N., Aubrey, P., Celidwen, Y., & Hill, K. (2023). Indigenous peoples: Traditional knowledge, climate change, and health. *PLOS global public health*, 3(10), e0002474. <https://doi.org/10.1371/journal.pgph.0002474>
- Republic Act No. 8371 Known as The Indigenous Peoples' Act of 1997. <https://www.officialgazette.gov.ph/1997/10/29/republic-act-no-8371/>
- Rheault, H., Coyer, F., & Jones, L. (2019). Health literacy in Indigenous people with chronic disease living in remote Australia. *BMC Health Serv Res*, 19, 523. <https://doi.org/10.1186/s12913-019-4335-3>
- Robinson, C., & Hughes, P. (1999). *Creating a sense of plan: Indigenous peoples in the vocational education and training*. NCVER, Adelaide.
- Romzi, A.N.A., Nordin, A., & Bakar, M.I.A. (2018). The perception of ICT adoption in small medium enterprise: A SWOT analysis. *International Journal of Innovation Business Strategy*, 19(1), 43-90.
- Saigian, K.T. (2020). *The importance of literacy*. https://www.researchgate.net/publication/346580011_The_Importance_of_Literacy
- Sangha, K.K. (2020). Global importance of indigenous and local communities' managed lands: Building a case for stewardship schemes. *Sustainability*, 12, 7839. <https://doi.org/10.3390/su12197839>
- Santos, A.I., & Serpa, S. (2020). Literacy: Promoting sustainability in a digital society. *Journal of Education, Teaching and Social Studies*, 2(1), 1. <https://doi.org/10.22158/jetss.v2n1p1>

- Senanayake, S.G.J.N. (2006). Indigenous knowledge as a key to sustainable development. *Journal of Agricultural Sciences - Sri Lanka*, 2(1), 87-94. <https://doi.org/10.4038/jas.v2i1.8117>
- Sy-Luna, G., & Diaz, L.C. (2023). The inner voices of the changing times: The journey of the Mangyan elders in governance practices. *International Journal of Multidisciplinary Research and Analysis*, 6(3), 1228-1248. <https://doi.org/10.47191/ijmra/v6-i3-45>
- Szymańska, A. (2021). Reducing socioeconomic inequalities in the European Union in the context of the 2023 Agenda for Sustainable Development. *Sustainability*, 13(13), 7409. <https://doi.org/10.3390/su13137409>
- Tom, M.N., Sumida Huaman, E. & McCarty, T.L. (2019). Indigenous knowledge as vital contributions to sustainability. *Int Rev Educ*, 65, 1–18 . <https://doi.org/10.1007/s11159-019-09770-9>
- Turkki, K. (2015). Envisioning literacy to promote sustainable well-being. In: Thoresen, V., Klein, J., Didham, R. (eds) *Responsible Living*. Springer, Cham. https://doi.org/10.1007/978-3-319-15305-6_11
- Ulluwishewa, R., Roskrige, N., Harmsworth, G., & Antaran, B. (2008). Indigenous knowledge for natural resource management: a comparative study of Māori in New Zealand and Dusun in Brunei Darussalam. *GeoJournal*, 73(4), 271–284. <http://www.jstor.org/stable/41148301>
- Valera, G.A., & Visco, E. (2015). Adaptation and coping strategies of the Mangyan in Oriental Mindoro, Philippines towards climate change-related occurrences. *Ecosystems & Development Journal*, 5(2), 27 – 34.
- Yawan, H. (2022). Yo si puedo: A Cuban literacy program to strengthen literacy level in West Papua, Indonesia. *International Journal of Indonesian Education and Teaching*, 6(1), 82-92.
- Zhang, X., Fu, P., Xi, Y., Li, L., Cao, C., and Ge, J. (2012). Understanding indigenous leadership research: Explication and Chinese examples. *The Leadership Quarterly*, 23(6), 1063-1079. <https://doi.org/10.1016/j.leaqua.2012.10.009>