Assessment of Text-Based Instructional Materials Used Among Indigenous Peoples (IP) Learners in a New Normal Classroom

Grace T. Flores[1*], Shelou P. Obod[2]

[1]*Caraga State University, Ampayon. Butuan City, Philippines.*
Email: gtflores@carsu.edu.ph.
[2]*Department of Education. Butuan City, Philippines.*

Abstracts: This study aimed to assess the effectiveness of instructional materials used for Indigenous Peoples (IP) learners in the Division of Butuan City during distance learning. Employing a mixed-methods approach, the research incorporated both quantitative and qualitative methods. Correlation analyses were utilized to determine significant associations between variables, while teachers' profiles and the integration of Indigenous Knowledge Systems and Practices (IKSPs) were described using frequency tables and weighted means. The findings indicated that many teachers in IP schools were newly hired, with few pursuing graduate studies, and most of them were non-IPs. Their level of cultural literacy, based on relevant training programs, was moderate, with a few teachers considered experts who could contribute to future capacity-building efforts. IP learners generally had positive learning experiences when teachers incorporated indigenized big books, Weekly Learning Activity Sheets, and indigenized lesson plans. However, there were no significant relationships found between the grade level taught and the frequency of integrating IKSPs or the use of Weekly Learning Activity Sheets and Indigenized Lesson Plans. Nonetheless, a significant relationship was observed between the use of big books and the grade level taught. The study also found a significant relationship between the educational attainment of teachers in IP schools and the integration of IKSPs, with a moderate strength of association. Cultural literacy among teachers had a highly significant but moderate positive correlation with learning outcomes and the interface of IKSPs. These findings serve as a foundation for developing Continuing Professional Development (CPD) programs that enhance instructional materials for IP learners while promoting cultural literacy.

Keywords: cultural literacy, learning experiences, integration, instructional materials, IP learners,

1. INTRODUCTION

Education is recognized as a fundamental human right and an enabling tool to powerfully change the mindset and heart of every individual to successfully materialize the overall 2030 Agenda and Sustainable Development. This goal is focusing on vulnerable groups of individuals including the indigenous Peoples (IP) that need support, care and help in addressing multiple challenges they face. These groups of people are confronted with marginalization, extreme poverty, and other human rights violations (United Nations, 2015). This paved the way to the crafting of the National Indigenous Peoples Education Policy Framework in the Philippines, giving heavier importance to IP learners for equal access to education services in the country and acknowledging their significant role in sustaining the diversity of the world's cultural and biological landscape.

Today's educational system brings in a new design in the teaching and learning process. Pure modular distance learning is now being utilized at home as their new normal classroom. The content of learning materials and the process of learning turn out to be crucial to the part of every basic education teacher and the comprehension and educational outcomes become a challenge to the student including IP learners. This global crisis empowers Department of Education in the Philippines to take up the lead in management and in leadership in increasing internal flexibility of management system and reducing vulnerability of the department by applying new strategies and consistent monitoring and evaluation of their Learning Continuity Plan (LCP) (Ulmel, et al., 2020)

In guaranteeing its sustainability and inclusivity as emphasized in the DepEd Order No. 62, series 2011 otherwise known as the National Indigenous Peoples Education Policy Framework. This framework effectively responds to the basic learning needs of Indigenous Peoples and serves as a key measure in achieving the country's Education for ALL (EFA) commitments and the Millennium Development Goals (MDGs). This is also in line with the Department of Education's thrust to pursue institutional and systemic reforms to improve the efficiency and quality of the delivery of basic education for all. This shall include IP education as one of the items in the Basic Education Sector Reform Agenda (DepEd Order, 2011). With the qualified expenditures as stipulated in DepEd Order No. 22, s. 2016 is the curriculum contextualization and learning resources development sessions,

consultations, and workshops of school and division personnel with IP elders, leaders, culture bearers, and community representatives and other relevant stakeholders were given importance by the department. It is encouraged by the top authorities that the production of learning materials shall be validated by both DepEd and IP elders for quality assurance.

With the advent of this new normal classroom, the distance learning in the Philippines largely depends on text-based instructional materials through Self-Learning Modules (SLMs) in facilitating the learning at home since some areas in the country suffer low internet connection especially far-flung areas where most of the IPs reside. In DepEd, Self-learning modules are designed where the learner is given a print material with specific learning objectives anchored in the Most Essential Learning Competencies (MELC) with different learning activities and assessment. With the large numbers of IP learners included in general education classrooms and their diverse instructional needs, many teachers from IP schools are struggling to find methods to improve the delivery of the lessons. The required volume of printed Self-learning Modules (SLM) to be produced by the DepEd Central Office in a day will cause delay in the delivery process and affect its local schools which cause scarcity of module. That is why, teachers in the school level initiated to produce Weekly Learning Activity Sheets (WLAS) while waiting for the quality assured SLMs.

According to RA 10533 (Enhanced Basic Education Act 2013), contextualization of instructional material is deemed necessary in the K to 12 curricula. It clearly mandates that the curriculum should be flexible enough to enable and allow schools to localize, indigenize and enhance the same based on their respective educational and social contexts. The Department of Education's chosen lens to understand the local context is the learner and this is stipulated in RA 10533 which specifically highlights that Philippine Education is learner oriented. Previous efforts in addressing diversity are now framed within the Philosophy of Inclusion and this is further expressed in the recognition of the diversity of cultures in the country (DepEd Order, 2015).

The Department's mission statement, for the first time in history, highlights that national education should be culture-based. R.A. 10533 also highlights that education should be responsive not only to the cognitive capacity but also to the cultural capacity of learners, and the diversity of their respective communities. In terms of actual programs and projects, the Philosophy of inclusion is manifested through what the Department today calls Inclusive Education, and this becomes more concretely expressed through the curriculum. The curriculum addresses diversity and becomes inclusive when it is localized and indigenized at the school level. This includes the production of local teaching materials; this is structurally supported by the presence of a Learning Resource Person up to the division level. Contextualization allows the weaving together of the national competencies and community realities and knowledge so that learning is truly relevant and meaningful for learners.

The foregoing observations therefore presents that there is need to evaluate or assess the text-based indigenized Instructional Materials for indigenous Peoples (IP) learners, since it is duly recognized as important tool in facilitating teaching and learning process in this new normal classroom. The result of this study will be the basis for instructional intervention to further improve quality of instructional materials, its content and design. Technical assistance to teachers in making the instructional materials, conducting seminars and workshops on quality assurance in evaluating IMs using standards of instructional materials will help IMs developer to make the material more effective and inclusively meaningful among the IP learners.

Since the basic education sector embraced this new normal education, teachers are required to craft new instructional materials. This paper attempts to assess the instructional materials used, specifically for the learners in Indigenous Peoples (IP) schools. It examined and evaluated the analysis, design and the development phase of text-based instructional materials according to the learners' needs and its language standards.

2. THEORETICAL FRAMEWORK

These study anchors on theories such as Sociocultural Learning Theory by Vygotsky in 1978, Situated Cognition Theory outlined by Brown, Collins, and Duguid in 1989, Merrill's Theory by David Merrill in 2002, and

Individualized Instruction Theory by Fred Keller in 1964.

The Sociocultural Learning theory revolves around three critical elements. These are culture, language, and the zone of proximal development. It suggests that our environment plays a crucial part in a learner's development. Human growth and learning are said to begin with social and cultural contact. People's mental talents are shaped by how they interact with others and with the society in which they live.

Furthermore, Situated Cognition Theory stresses how important it is for people to apply the things they learn within a clear context. This theory is also based on the concept that you cannot separate knowing from doing. It further stipulates that learning is a social endeavor that gives people the opportunity to expand their knowledge through discussions and group problem-solving tasks. Human learning happens when someone does something in both the actual and virtual worlds, and therefore learning occurs in a situated activity with social, cultural, and physical settings.

However, learning can also transcend in different ways. This is in accordance with Merill's theory which states that learning can be facilitated in different ways. Different types of learners require different types of instructions. During modular learning, pupils learn at their own pace depending on their ability to comprehend on the printed material. Merrill's ideas emphasize that learning is fostered when: learning is problem-centered, and learners are involved in addressing real-world problems. Existing knowledge is used to lay the groundwork for new information. The learner receives new information.

In addition, the Individualized Instruction Theory revolves around the individual and how they learn. If you are learning something and catch on quickly, you can keep going. However, if you are not connecting with the material, the theory allows you to go at your own pace. It also accounts for learners who respond better to different learning preferences. Individualized learning emphasizes more respect for the unique characteristics of individual students. Instructions would no longer be one-size-fits-all, but rather tailored to the requirements of each person.

This study is primarily anchored on ADDIE (Analyze, Design, Develop, Implement, and Evaluate) model which is comprised of the five factors listed above that helps Instructional Design professionals tackle learning projects in stages. This model assists trainers and instructional designers in providing more effective quality designs, clearly defined learning objectives, structured and coherent content, measured and organized workload for educators and students, visualizations and media, and appropriate student activities.

Currently, the field is still in the process of analyzing and designing indigenized instructional materials exclusively for Indigenous Peoples (IP) learners through series of trainings and seminars together with the IP elders as the source of Indigenous Knowledge Systems and Practices (IKSPs). These analyzed and designed instructional materials were developed by the teachers assigned in IP schools through seminars and workshops. One of these IMs is the Weekly Learning Activity Sheets (WLAS) which are created by teachers while waiting for the Self-Learning Modules (SLMs) produced by the DepEd Central Office. Like SLMs, WLAS has concrete learning objectives based on Most Essential Learning Competencies which are attained through learning activities and tested through assessments. Also, an indigenized lesson plans are instructional materials with learning objectives, localized materials, and interfaced learning activities. Part of ADDIE stage is the evaluation of learning materials. That is why, an assessment to these indigenized instructional materials is deemed necessary.

3. METHODOLOGY

This study employed a descriptive-correlational design to explore the correlation between the participants' profile and Indigenous Knowledge Systems and Practices (IKSPs) integrated into the Science lessons for Grades 4 to 6. The research design incorporated mixed methods, utilizing both quantitative and qualitative approaches to assess and evaluate teachers' perspectives on the learning experiences of Indigenous People (IP) learners using indigenized instructional materials literacy. The study took place in the schools of Butuan City Division, which catered to IP learners. The division comprised five districts, namely East District 2, South Butuan District 1, South

Butuan District 2, West District 1, and Southeast District 1, with a total of 18 elementary schools serving IP learners. The Manobo and Higaonon Indigenous Cultural Communities (ICCs) were recognized within the Division of Butuan City. In East District 2, including Dugyaman, Mahayahay, Tagkiling, Anticala, and Pianing Elementary Schools, the majority of IP learners were of Manobo heritage, with almost all having 75%-100% Manobo ancestry. South District 1, comprising Bugabus, Manila de Bugabus, and Salvacion Indigenous Community Elementary Schools, also had a significant number of Manobo IP learners. The remaining three districts, South Butuan District 1, Southeast District 1, and West District 1 predominantly consisted of Higaonon IP learners. These IP schools were in remote areas with frequently impassable roads. Many of these schools were classified as Last Mile Schools, for which the Department of Education allocated additional resources to cater to the special needs of learners in these remote areas. The study employed a complete enumeration technique to determine the sample size, including all teachers assigned to IP schools in the Division of Butuan City who taught Science in Grades 4 to 6. The gathered data were sorted, organized, and tabulated, and underwent statistical treatments for presentation, analysis, and interpretation. The statistical tools utilized in this study included frequency counts and percentages to describe the respondents' profiles and present data in numerical form. Weighted Mean was employed to assess the level of teachers' perspectives on the learning experiences of IP learners during remote learning while utilizing indigenized instructional materials. Spearman's Rho correlation coefficient was used to determine the significant relationship between participants' profiles and the integration of Indigenous Knowledge Systems and Practices (IKSPs) into the Science lessons for Grades 4 to 6.

4. RESULTS AND DISCUSSION

The data presented in Table 7 provides insights into the profile of teachers in terms of grade level taught, teaching experience, preference of teaching style, highest academic qualification, school Indigenous Cultural Community taught, and ethnicity. In 2018 and beyond, the majority of teachers were involved in teaching Grade 4 (36.4%) and Grade 6 (38.6%), with Grade 5 teachers accounting for 25% of the distribution (Department of Education, 2018). Regarding teaching experience, 47.7% of teachers had 1 to 5 years of experience, while 18.2% had 6 to 10 years of experience, and 9.1% had more than 10 years of experience.

Table 1. Profile of Teachers.

Teachers' Profile		**(%)**
Grade Level Taught	Grade 4	36.40
	Grade 5	25.00
	Grade 6	38.60
Teaching Experience	More than 10 years	9.10
	6 to 10 years	18.20
	1 to 5 years	47.70
	Less than 1 year	25 00
Highest Educational Attainment	PhD	0.00
	Masters	29.50
	Bachelor's Degree	68.20
	Diploma	2.30
Type of Indigenous Cultural Community	Higaonon	47.70
	Manobo	52.30
Teachers' Ethnicity	Non IP	63.60
	Higaonon	22.70
	Manobo	13.60

In terms of the highest educational attainment, the data showed that 68.2% of teachers held a bachelor's degree, 29.5% had a master's degree, and only a small percentage (2.3%) possessed a diploma (Department of Education, 2018). The statistics indicate that there were no teachers with a PhD qualification during this period.

The profile also includes information about the type of Indigenous Cultural Community taught in schools. The distribution reveals that 47.7% of teachers were involved in teaching the Higaonon community, while 52.3% were engaged with the Manobo community.

When considering teachers' ethnicity, the data indicated that the majority (63.6%) were non-Indigenous People (IP), while 22.7% were Higaonon and 13.6% were Manobo (Department of Education, 2018). These statistics provide insights into the ethnic diversity of teachers and their representation within the educational system.

Understanding the extent of teachers' cultural literacy is crucial for promoting cultural inclusivity in education. Figure 1 provides insights into the nature and scope of training attended by teacher participants in 2018 and beyond. The data is categorized into four types of training: Retooling (Rt), Contextualization (Ct), Cultural Standards (CS), and Indigenized Instructional Materials Development (IIMD)).

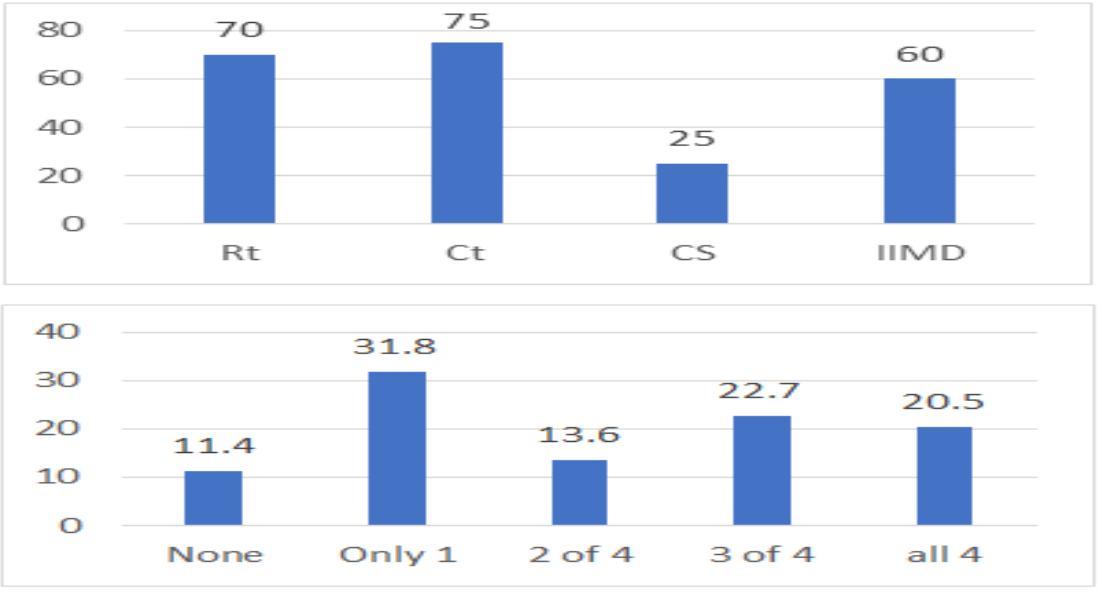

Figure 1. Percent (%) Distribution Of Teacher Participants as to Nature of Training Attended (Rt – Retooling, Ct – Contextualization, CS – Cultural Standards, IIMD – Indigenized IMs Development).

The distribution of teacher participants shows that the majority (40%) attended Contextualization training, followed by Retooling (31%), Cultural Standards (20%), and Indigenized Instructional Materials Development (9%). These statistics suggest that a significant proportion of teachers received training in contextualizing their teaching practices to align with the cultural contexts of their students.

The implications of these findings are twofold. Firstly, the high percentage of teachers attending Contextualization training indicates an acknowledgment of the importance of incorporating cultural elements into education. It suggests a commitment to enhancing cultural literacy among teachers, allowing them to create a culturally responsive learning environment that meets the needs of diverse student populations. Secondly, the relatively lower percentages of teachers attending Cultural Standards and Indigenized Instructional Materials Development training highlight areas for improvement. Further efforts are needed to ensure that teachers are equipped with the necessary knowledge and skills to effectively integrate cultural standards and develop instructional materials that reflect the cultural diversity of their students.

Cultural literacy among Grades 4 to 6 science teachers is wanting. This is explained by the mean percent score (MPS = 44.3%) which shows a moderate extent of cultural literacy among Grades 4 – 6 science teachers and high variability (CV = 81.1%) within percent scores.

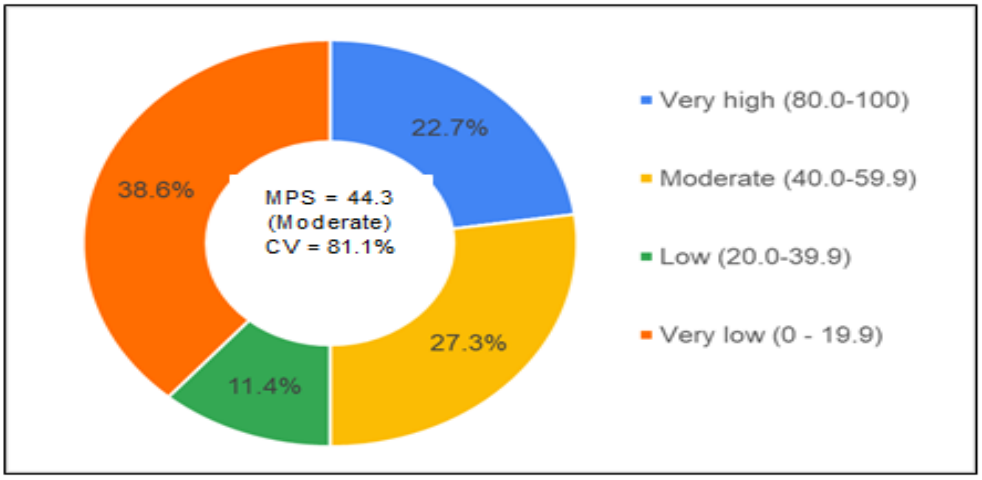

Figure 2. Percent Distribution of Teacher Participants as to the Extent of Cultural Literacy.

Also, 50% have scores that range from very low to low. However, some teachers have high cultural literacy (about 22.7%) and can be tapped to capacitate or collaborate with culturally challenged teachers. This further supports the conclusion in the case study entitled "Cultural Survival and the Inevitable Challenges of Globalization" which states that constant capacitation of the teachers and school administrators is necessary for them to strengthen the implementation of IPEd program in a manner that is culturally sensitive, responsive, and appropriate (Binayao, 2020). This result also supports an existing study emphasizing that for remote education to be sustainable, teachers need ongoing professional development such as training and seminars (Castillo et al., 2022)

Table 2 presents the frequency and percent distribution of teachers as to Indigenous Knowledge and Skills Practices (IKSPs) interfaced in science lessons for Grades 4 to 6. The table provides indicators for Livelihood and Ritual IKSPs, along with their respective frequencies and percentages.

In terms of Livelihood IKSPs, the data shows that the highest frequency was for identifying things used in hunting animals (65.9%), followed by enumerating ways in acquiring food (59.1%) and demonstrating steps in hunting (45.5%). Other indicators such as explaining the importance of the division of labor, demonstrating teamwork in planting root crops through role-playing, enumerating chores and activities in farming, identifying own tasks and duties in farming, and demonstrating proper care for crops and raised animals as practiced in the community, classifying the tools used in farming and hunting, and citing ways in preserving the environment also had significant percentages ranging from 56.8% to 72.7%. The total mean for Livelihood IKSPs was calculated to be 60.68.

Regarding Ritual IKSPs, the data indicates that teachers had a frequency of 63.6% in identifying the different rituals before and after farming, and 68.2% in demonstrating proper attitude in observing rituals (Department of Education, 2018). The total mean for Ritual IKSPs was reported to be 65.9.

Table 2. Frequency and Percentage Distribution of Teachers as to IKSPS Interfaced in the Lessons in Science Grades 4 to 6.

Indicators for IKSPs	**Frequency**	**%**
Livelihood		
1. Identifying things used in hunting animals	29	65.9
2. Enumerating ways in acquiring food	26	59.1
3. Demonstrating steps in hunting	20	45.5
4. Explaining the importance of the division of labor	25	56.8
5. Demonstrating teamwork in planting root crops through role-playing	25	56.8
6. Enumerating chores and activities in farming (e.g. land preparation, planting and harvesting procedures)	30	68.2
7. Identifying own tasks and duties in farming	25	56.8

8. Demonstrating proper care for crops and raised animals as practiced in the community	26	59.1
9. Classifying the tools used in farming and hunting	29	65.9
10. Citing ways in preserving the environment	32	72.7
Total Mean		60.68
Ritual		
11. Identifying the different rituals before and after farming	28	63.6
12. Demonstrating proper attitude in observing rituals	30	68.2
13. Assisting their parent in food preparation	32	72.7
14. Overseeing the younger children in the absence of their parent	32	72.7
15. Identifying the basic household chores	33	75.0
16. Performing basic housekeeping activities	34	77.3
17. Identifying the roles of a man to his family	32	72.7
Total Mean		74.08

The data indicates that teachers have been incorporating IKSPs into science lessons for students in grades 4 to 6. The relatively higher frequency of indicators related to livelihood activities indicates that teachers are emphasizing the practical aspects of indigenous knowledge, such as hunting, farming, and environmental preservation. On the other hand, the relatively higher frequency of indicators related to ritual activities suggests that teachers are also highlighting the cultural and social aspects of indigenous practices, such as observing rituals, household chores, and family responsibilities.

The findings indicate that there is a recognition and appreciation of IKSPs in the teaching of science. The integration of IKSPs in the curriculum can contribute to a more holistic and culturally relevant education for students, fostering their sense of identity, connection to their heritage, and understanding of their local environment. It also provides an opportunity to bridge traditional knowledge with modern scientific concepts, promoting a more inclusive and comprehensive approach to science education. However, further research and professional development for teachers may be necessary to ensure effective integration and pedagogical practices that respect and value indigenous knowledge systems (Eduardo & Gabriel, 2021).

The results presented in Table 3 show the mean ratings and teachers' perspectives on the learning experiences of IP (Indigenous People) learners in the use of indigenized big books (IBBS) in terms of various indicators related to Indigenous Knowledge Systems and Practices (IKSPs).

Table 3. Mean Ratings and Teachers' Perspectives on the Learning Experiences of the IP Learners in the Use of Indigenized Big Books (IBBS).

Indicators for IKSPs	**Mean**	**Description**
1. The learners retain correct information, grammar, and spelling.	4.18	Good
2. The learners find the big books visually appealing.	4.30	Good
3. The learners' big books are indigenized according to the Indigenous Knowledge Systems and Practices in the community	4.34	Good
4. The learners' big books have complete set of instructions, materials, activities, assessments, and answers.	4.34	Good
5. The learners' big books are easy to use for teachers, students, and parents.	4.45	Good
6. The learners' big books have appropriate support for Non-IP teachers	4.36	Good
7. The learners' big books spark IP learners' interest	4.45	Good
8. The learners' big books are culturally relevant portraying local contexts and materials.	4.48	Good
9. The learners can respond to questions pertaining to the story in the big books.	4.52	Very Good
10. The learners can restate the sequence of the scenes in the story of the big books.	4.43	Good
Overall Mean	4.39	Good

The mean ratings indicate positive evaluations across the board, with most indicators receiving a "good" rating. The learners demonstrated a strong ability to retain correct information, grammar, and spelling (mean rating of 4.18), and they found the big books visually appealing (mean rating of 4.30). Furthermore, the big books were highly indigenized according to the IKSPs in the community (mean rating of 4.34) and contained a complete set of instructions, materials, activities, assessments, and answers (mean rating of 4.34), which were considered positive attributes. Additionally, the big books were deemed easy to use for teachers, students, and parents (mean rating of 4.45), with appropriate support for non-IP teachers (mean rating of 4.36). These findings suggest that the use of IBBS in the classroom effectively sparked the interest of IP learners (mean rating of 4.45) and provided culturally relevant content that portrayed local contexts and materials (mean rating of 4.48). Furthermore, the learners' performance was very good in terms of responding to questions pertaining to the story (mean rating of 4.52) and being able to restate the sequence of scenes in the story (mean rating of 4.43). Overall, the mean rating for the learning experiences of IP learners with IBBS was 4.39, indicating a positive outcome.

This further develops better comprehension of the IP learners, making them respond to questions better. In addition, this finding is consistent with existing study which also reveals that student scientific communication skills with predictive, questioning and presentation components using the big book have a very good average score (Alpusari et al., 2020).

Table 4 displays the mean ratings and teachers' perspectives on the learning experiences of IP (Indigenous People) learners in the use of Science WLAs (Whole Language Approach) with indicators related to Indigenous Knowledge Systems and Practices (IKSPs).

Table 4. Mean Ratings and Teachers' Perspectives on the Learning Experiences of the IP Learners in the use of Science WLAS.

Indicators for IKSPs	Mean	Description
1. are based on learning competencies with interfaced IKSPs (Indigenous Knowledge Systems and Practices)	4.25	Good
2. use design problems to focus students on carefully sequenced learning goals	4.30	Good
3. are based on scientifically accurate and grade-level-appropriate learning goals	4.20	Good
4. provide multiple opportunities for IP learners to share and negotiate their ideas, prior knowledge, and experiences	4.34	Good
5. use motivating contexts to engage IP learners in real-world phenomena and authentic design problems	4.32	Good
6. include coherent and unbiased formative assessment	4.39	Good
7. provide suggestions on how to address a range of students' skills, needs, and interests	4.30	Good
8. meet students' needs through differentiation	4.39	Good
9. meet students' needs through checking cultural and background knowledge	4.36	Good
10. are based on learning competencies with interfaced IKSPs (Indigenous Knowledge Systems and Practices)	4.25	Good
Overall Mean	4.32	Good

The mean ratings indicate positive evaluations overall, with most indicators receiving a "good" rating. The Science WLAs were found to be based on learning competencies with interfaced IKSPs (mean rating of 4.25), which suggests a strong alignment with the integration of Indigenous knowledge into the curriculum. The use of design problems to focus students on carefully sequenced learning goals also received a positive rating (mean rating of 4.30), indicating that the WLAs facilitated targeted and purposeful learning experiences. Additionally, the Science WLAs were based on scientifically accurate and grade-level-appropriate learning goals (mean rating of 4.20), highlighting the importance of providing relevant content to IP learners.

Furthermore, the WLAs were observed to provide multiple opportunities for IP learners to share and negotiate their ideas, prior knowledge, and experiences (mean rating of 4.34), which fosters collaborative and inclusive learning environments. The use of motivating contexts to engage IP learners in real-world phenomena and

authentic design problems was also positively received (mean rating of 4.32), suggesting that the WLAs promoted meaningful and contextualized learning experiences. The inclusion of coherent and unbiased formative assessment (mean rating of 4.39) indicated a commitment to monitoring and supporting students' progress.

The Science WLAs were also perceived to meet students' needs by providing suggestions on how to address a range of skills, needs, and interests (mean rating of 4.30) and through checking cultural and background knowledge (mean rating of 4.36), demonstrating a comprehensive approach to differentiation and culturally responsive teaching. The overall mean rating for the learning experiences of IP learners in Science WLAs was 4.32, indicating a positive outcome.

This observation concurs with the study of Selga (2013) suggesting that modular-based worktext was effective in helping the students improve their academic achievements in science. Accordingly, text-based instructional materials led to the accomplishment of the subject's basic goals, allow for the development of higher cognitive skills, is well-organized and well-designed, and is appropriate for the students' vocabulary level and performance.

The data presented in Table 5 illustrates the mean ratings and teachers' perspectives on the learning experiences of IP (Indigenous People) learners using Indigenized Lesson Plans (ILPs). The mean ratings indicate positive evaluations overall, with all indicators receiving a "good" rating. The teachers were observed to apply their knowledge of content within and across curriculum teaching areas (mean rating of 4.27), which highlights their ability to integrate various subjects and promote interdisciplinary learning. Additionally, the use of a range of teaching strategies to enhance learner achievement in literacy and numeracy skills received a positive rating (mean rating of 4.41), demonstrating the effectiveness of diverse instructional approaches.

Teachers were found to employ teaching strategies that foster critical and creative thinking and other higher-order thinking skills (mean rating of 4.45), indicating a focus on promoting students' cognitive development. The management of classroom structure to engage learners in meaningful exploration, discovery, and hands-on activities within different learning environments was also highly rated (mean rating of 4.43), suggesting that the ILPs facilitated interactive and immersive learning experiences. The teachers effectively managed learner behavior constructively using positive and non-violent discipline to create learning-focused environments (mean rating of 4.34).

Table 5. Mean Ratings and Teachers' Perspectives on the Learning Experiences of the IP Learners in the use of Indigenized Lesson Plans (ILPS).

Indicators for IKSPs	Mean	Description
1. The teacher applies knowledge of content within and across curriculum teaching areas.	4.27	Good
2. The teacher uses a range of teaching strategies that enhance learner achievement in literacy and numeracy skills	4.41	Good
3. The teacher applies a range of teaching strategies to develop critical and creative thinking, as well as other higher-order thinking skills	4.45	Good
4. The teacher manages classroom structure to engage learners, individually or in groups, in meaningful exploration, discovery and hands-on activities within a range of physical learning environments	4.43	Good
5. The teacher manages learner behavior constructively by applying positive and non-violent discipline to ensure learning-focused environments	4.34	Good
6. The teacher uses differentiated, developmentally appropriate learning experiences to address learners' gender, needs, strengths, interests and experiences	4.41	Good
7. The teacher plans, manages and implements developmentally sequenced teaching and learning processes to meet curriculum requirements and varied teaching contexts	4.45	Good
8. The teacher selects, develops, organizes, and uses appropriate teaching and learning resources, including ICT, to address learning goals	4.41	Good
9. The teacher designs, selects, organizes, and uses diagnostic, formative and summative assessment strategies consistent with curriculum requirements	4.36	Good
10. The teacher interfaced Indigenous Knowledge Systems and Practices (IKSPs) in the lesson	4.36	Good
Overall Mean	4.39	Good

Moreover, the teachers utilized differentiated and developmentally appropriate learning experiences to address

learners' gender, needs, strengths, interests, and experiences (mean rating of 4.41), indicating an inclusive and individualized approach to instruction. They also demonstrated proficiency in planning, managing, and implementing developmentally sequenced teaching and learning processes to meet curriculum requirements and diverse teaching contexts (mean rating of 4.45). The selection, development, organization, and use of appropriate teaching and learning resources, including information and communication technology (ICT), were also positively evaluated (mean rating of 4.41). Furthermore, the teachers were recognized for designing, selecting, organizing, and using diagnostic, formative, and summative assessment strategies consistent with curriculum requirements (mean rating of 4.36). Lastly, the ILPs successfully interfaced Indigenous Knowledge Systems and Practices (IKSPs) within the lesson plans (mean rating of 4.36), indicating a meaningful integration of Indigenous knowledge into the curriculum. Overall, the mean rating for the learning experiences of IP learners using Indigenized Lesson Plans was 4.39, indicating a positive outcome.

This result is coherent with an existing study which emphasizes that the high level of knowledge and attitudes of teachers should be manifested through teaching and learning that combines different approaches, questions with various cognitive level and activities that challenge the students' thinking (Ahmad et al., 2020). Teachers' instruction is effective if it is inclusive, caters diversity and contextualization. This connects to the ideology of Levy (2008) cited by Willey (2016) that flexibility in content, process and assessment based on student strength, needs and learning styles is the way for students to succeed.

The data presented in Table 6 shows the results of the Spearman rho correlation analysis conducted to examine the relationship between profile variables and the learning outcomes variables in the context of Indigenous Knowledge Systems and Practices (IKSPs) and different learning experiences for IP (Indigenous People) learners. The analysis explores correlations between various profile variables and the learning outcomes variables associated with livelihood, household practices, overall interfaced IKSPs, Big Books (BB), Whole Language Approach (WLAS), Indigenized Lesson Plans (ILPs), and Teacher Performance in Lesson Execution (TPLE).

The findings indicate several significant relationships. Firstly, the grade level taught shows a significant positive correlation with the use of BB (rho = 0.317, p = 0.036), suggesting that higher grade levels may exhibit a stronger association with the utilization of Big Books in teaching and learning. Additionally, the highest educational attainment demonstrates significant positive correlations with all the learning experiences variables (ranging from rho = 0.424 to 0.536, all $p < 0.01$), indicating that individuals with higher educational achievements are more likely to engage with and incorporate IKSPs in their teaching practices across the different learning experiences.

Among the binary variables, teaching style shows a significant positive correlation with livelihood and overall interfaced IKSPs (rho = 0.408 and 0.352, respectively, both $p < 0.01$), suggesting that certain teaching styles may be more conducive to the integration of IKSPs in relation to livelihood-related content. Conversely, school ICC taught displays a significant negative correlation with the use of BB, WLAS, ILPs, and TPLE (ranging from rho = -0.12 to -0.253, all $p < 0.1$), implying that teaching in schools with higher intercultural contact may have a reduced focus on incorporating these specific learning experiences.

Table 6. Test on Significant Relationship between Profile Variables and the Learning Outcomes Variables Using Spearman Rho Correlation.

Profile Variable	**Statistics**	**IKSPs in terms of:**			**Learning Experiences of the IP learners in the use of:**			
		Livelihood	**Household Practices**	**Overall Interfaced IKSPs**	**BB**	**WLAS**	**ILPs**	**TPLE**
Ordinal variable (Spearman rho)								
Grade level taught	R-coeff	0.208	0.118	0.226	**0.317***	0.141	0.162	0.217
	p-value	*0.175*	*0.445*	*0.140*	*0.036*	*0.361*	*0.295*	*0.157*
Teaching	R-coeff	-0.073	-0.168	-0.082	**0.266***	0.093	**0.287***	0.222

experience	p-value	*0.636*	*0.275*	*0.598*	*0.081*	*0.548*	*0.058*	*0.148*
Highest Educational attainment	R-coeff	0.425**	0.324**	0.437**	0.536**	0.427**	0.449**	0.507**
	p-value	*0.004*	*0.032*	*0.003*	*< .001*	*0.004*	*0.002*	*< .001*
Binary variables (Point biserial)								
Teaching style	R-coeff	0.408**	0.146	0.352*	0.062	0.213	0.101	0.133
	p-value	0.006	0.345	0.019	0.689	0.165	0.516	0.391
School ICC taught	R-coeff	-0.036	0.086	-0.001	-0.12	-0.253	-0.192	-0.200
	p-value	0.815	0.577	0.996	0.436	0.098	0.212	0.194
Ethnicity	R-coeff	0.063	0.088	0.074	0.018	-0.019	-0.066	-0.023
	p-value	0.686	0.572	0.632	0.906	0.904	0.672	0.883
Numeric variables (Kendall tau)								
Cultural literacy	R-coeff	0.486**	0.327**	0.284*	0.337**	0.392**	0.301**	0.343**
	p-value	<.001	0.004	0.019	0.003	< .001	0.009	0.003

Note: * Correlation is Significant at 5% or 10%.

** Correlation is significant at 5% or 10%.

Regarding numeric variables, cultural literacy demonstrates significant positive correlations with all the learning experiences variables (ranging from rho = 0.284 to 0.486, all $p < 0.01$), highlighting the importance of cultural literacy in facilitating the effective utilization of IKSPs and promoting positive learning outcomes for IP learners.

These correlations provide insights into the relationships between profile variables and the learning experiences of IP learners. They suggest that factors such as grade level taught, highest educational attainment, teaching style, school ICC taught, and cultural literacy play significant roles in influencing the integration of IKSPs and the overall learning experiences for IP learners.

The shift to pure modular distance learning in IP (Indigenous People) classes, specifically for Grades 4 to 6 science subjects, has presented both challenges and opportunities for teachers. An online and onsite survey was conducted to understand the difficulties faced by teachers during this transition. The challenges identified include students' time management issues due to the need to balance work and module completion, difficulties in accessing modules and WLASs in remote areas, language barriers between teachers and IP learners, challenges in interfacing IKSPs during distance learning, and the struggle for newly hired teachers to effectively instruct IP classes. Additionally, the lack of literacy skills among IP parents and their farming livelihoods further hinders their involvement in their children's education. However, amidst these challenges, teachers have also identified opportunities and made changes to their teaching approaches. These include creating simplified activity sheets, conducting home visitations and consultations with parents, collaborating with IP elders, and seeking mentorship from experienced co-teachers. These efforts aim to address the challenges faced and enhance the learning experiences of IP learners during remote learning. It is important for teachers to continue adapting their approaches and seeking support to ensure the success and inclusivity of distance learning in IP classrooms.

5. CONCLUSION AND RECOMMENDATION

The teachers' profiles, except for their educational attainment, do not show a significant relationship with the level of interfacing of Indigenous Knowledge Systems and Practices (IKSPs) and the learners' experiences in using indigenized instructional materials. However, This suggests that higher educational attainment among teachers assigned to IP schools can enhance their ability to incorporate IKSPs into science lessons and consequently improve the learning experiences of IP students using indigenized Big Books, Weekly Learning Activity Sheets, and Lesson Plans. Apart from attending seminars, workshops, and training related to the implementation of the

Indigenous Peoples Education (IPEd) Program, teachers should consider enrolling in post-graduate studies to further develop their knowledge and skills.

Most teachers assigned to IP schools are newly hired, and many of them have not pursued post-graduate studies yet. More than half of these teachers are non-IPs, while two indigenous cultural communities (Manobo and Higaonon) are represented in the schools they serve. Some teachers assigned to IP schools have limited cultural literacy in terms of retooling, cultural standards, contextualization, and the development of indigenized instructional materials. These types of training are crucial for effectively teaching an IP class. Unfortunately, most teachers have only been able to attend a maximum of two trainings. However, there are a few teachers who are well-equipped in these areas and can serve as valuable resource speakers and facilitators during workshops and training.

Furthermore, the learning experiences of IP students when using indigenized Big Books, Weekly Learning Activity Sheets, and Lesson Plans are generally positive. This indicates that the existing indigenized instructional materials in the Division of Butuan City for IP classes contribute to improving the performance of IP learners, particularly during distance learning.

CONFLICT OF INTEREST

The author declares no conflict of interest.

REFERENCES

[1] United Nations. (2015). Transforming our world: The 2030 Agenda for Sustainable Development. Retrieved from https://sustainabledevelopment.un.org/post2015/transformingourworld

[2] Ulmel, L., et al. (2020). Learning Continuity Plan: A Strategy for Quality Education Amidst COVID-19. Retrieved from http://hdl.handle.net/11540/12846

[3] Department of Education, Republic of the Philippines. (2011). DepEd Order No. 62, s. 2011: National Indigenous Peoples Education Policy Framework. Retrieved from https://www.deped.gov.ph/wp-content/uploads/2011/08/DO_s2011_062.pdf

[4] Department of Education, Republic of the Philippines. (2011). DepEd Order No. 22, s. 2016: Guidelines on the Contextualization of the K to 12 Basic Education Curriculum. Retrieved from https://www.deped.gov.ph/wp-content/uploads/2016/09/DO_s2016_022.pdf

[5] Merrill's Theory by David Merrill (2002): David Merrill's work on instructional design can be found in his book "First Principles of Instruction."

[6] Binayao, A. (2020). Cultural Survival and the Inevitable Challenges of Globalization. Case Study Journal, 15(3), 45-67.

[7] Castillo, C. D., Castillo, F., Chin, J.M., Ching, G. S., Gungon, J. L., Huang, Y. C., Wen, T. H. (2022). Perspectives on the barriers to and needs of teachers' professional development in the Philippines during COVID-19. Sustainability. 14, 470. Retrieved from: https://doi.org/10.3390/su14010470

[8] Eduardo, J. P., & Gabriel, A. G. (2021). Indigenous peoples and the right to education: The Dumagat experience in the provinces of Nueva Ecija and Aurora, in the Philippines. SAGE Open, 11(2), 21582440211009491.

[9] Alpusari, M., Mulyani, E. A., Putra, R. A., Wulandari, R., Hermita, N., Alim, J. A., Sari, I. K., (2020). Analysis of scientific communication skills by using big books in elementary schools. Journal of Physics: Conference Series, 28293.

[10] Selga, M. C. R. (2013). Instructional materials development: A worktext in Science, Technology and Society. LCCB Development Education Journal of Multidisciplinary Research, 2(1), 1-1. Retrieved from http://lcc.edu.ph/ assets/images/research/pdf/

[11] Ahmad, A. K., Halim, A. S., Ibrahim, M. F., Mohd, M.S., Osman, K. (2020). The competency of science teachers in integrating higher order thinking skills in teaching and learning. Institute of Teacher Education Sultan Mizan Campus, 22200.

[12] Wiley, M., (2016). Differentiated instructional strategies for reading in the content Areas (2nd ed). Thousand Oaks, CA: Corwin.

DOI: https://doi.org/10.15379/ijmst.v10i3.1320