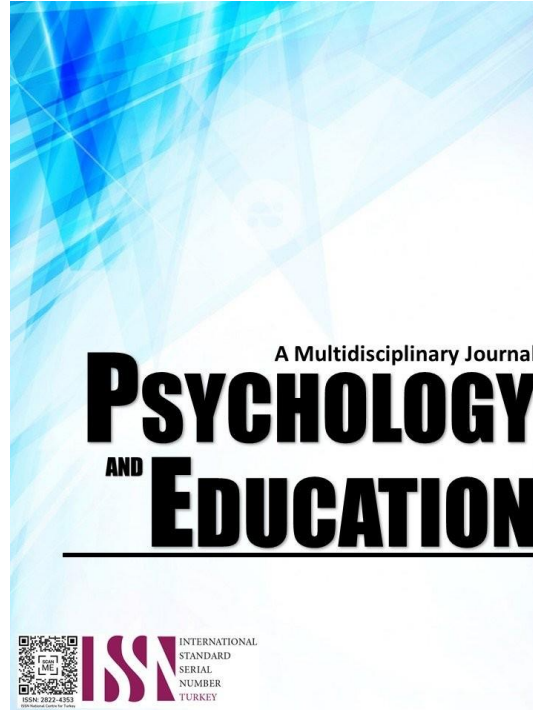


KUT ADAT NE KUT KMO BE KUT BENWU: A CULTURE-BASED MODULE FOR TBOLI LEARNERS' ACADEMIC DEVELOPMENT



PSYCHOLOGY AND EDUCATION: A MULTIDISCIPLINARY JOURNAL

Volume: 29

Issue 3

Pages: 341-350

Document ID: 2024PEMJ2760

DOI: 10.5281/zenodo.14539464

Manuscript Accepted: 11-21-2024

Kut Adat Ne Kut Kmo Be Kut Benwu: A Culture-Based Module for Tboli Learners' Academic Development

Aleazar R. Sabio, * Mary Grace O. Gallego

For affiliations and correspondence, see the last page.

Abstract

A non-IP teacher teaching Tboli students aspires to establish a classroom where diversity and expertise knows no boundaries. This study presents the impact of culture-based module (CBM) in Araling Panlipunan on the academic development of Tboli learners in Haliland Integrated School. Emphasizing the unavailability of CBM in DepEd- South Cotabato and advocating inclusive education, this study addresses the need to develop a CBM in Araling Panlipunan that will enhance the learning of Tboli learners in the first quarter of school year 2023-2024. There are seven validators and twenty-three participants in this study. Descriptive-evaluative and experimental research designs were employed. The effectiveness of the CBM was tested on the experimental group and the academic development was compared to the control group using the mean, standard deviation and t-test. Finally, it is revealed in the findings that the CBM in Araling Panlipunan is an effective tool in enhancing academic development. The study's outcome is attributed to a highly acceptable module as evaluated by experts and it indicates that the module was well edited and therefore significantly impacted participants' learning gains on the 5 most essential learning competencies in Araling Panlipunan for the first quarter. The CBM reaffirms the Socio-cultural Theory of Cognitive Development of Lev Vygotsky and Jerome Bruner's Theory of Learning and Cognitive Development that both state that a person's culture amplifies his cognitive development. This innovative teaching of integrating sociocultural context made the learning more meaningful, relevant and applicable to the daily lives of the learners. Since learning is influenced by culture, this study recommends and encourages educators to highlight cultural contingency of learning emphasizing learners' cultural background.

Keywords: *culture-based module, Tboli learners, academic development, indigenous knowledge, Araling Panlipunan*

Introduction

In today's diverse educational landscape, the Tboli learners in Lake Sebu face challenges in education to a lack of culturally relevant materials. There is a call to create an inclusive and empowering learning environment that fosters student's pride in their cultural heritage in the municipality while providing a meaningful educational experience. Thus, the researcher dreams of embarking on a journey where culture and education converge.

The researcher's dream was rooted from the World Indigenous Nations Higher Education Consortium report that educational system based on Western pedagogy and schools of thought, has failed indigenous peoples worldwide. As a result, the consortium has called for Indigenous peoples to develop their teaching methodology (Moe, 2021).

While in the Philippines, the Department of Education (DepEd) promotes contextualized curriculum through its K to 12 basic education program with the goal of transforming education (Llego, 2022). However, despite government programs guaranteeing Indigenous groups' rights to access education, providing spaces for unique and authentic learning for IP learners remains difficult. In fact, according to Pepano (2019), most of the schools in the Philippines lack learning materials to support authentic learning, which cited as one of the weaknesses of contextualized instruction.

Furthermore, Bae Jennifer Pia "Limpayen" Sibug-las, commissioner for Central Mindanao of the National Commission on Indigenous Peoples (NCIP), disclosed that basic and culture-based instruction holds great importance for 41% of IP communities in the region (Malipot, 2020). While Dr. Carlito Rocafort, DepEd – region XII director, promotes a responsive education approach that focuses on contextualizing lessons by using the local language for teaching, having elders as teachers and mentors, and using the ancestral domain as the classroom (Gubalani, 2021).

Presently, the Schools Division of South Cotabato issued a Division Memorandum CID No. 095, s. 2022 which both mandate the conduct of training workshops on the Balik Kasaysayan Program. The said program encourages all the teachers of the South Cotabato to localize, indigenize, and contextualize teaching and learning materials to escalate students' learning. The program is aligned to DepEd Order No. 35, series of 2016, states that developing culture-based teaching materials is a vital task for teachers because DepEd's national office is not familiar with the local culture and knowledge of all areas in the country (DepEd, 2021).

At present, a culture-based module (CBM) for Tboli learners is unavailable in the Schools Division of South Cotabato. The Learning Resources Management and Development System (LRMDS) of the said division only offers Self-learning modules (SLM) written in Binisaya, Hiligaynon, and Iloko (S. Jabido & L. Ledda personal communication, June 26, 2023).

Hence, this study aimed to develop a CBM in Araling Panlipunan 10 that nurtured authentic learning of Tboli learners. In particular, the study focused on assessing the effectiveness of a CBM on the academic development of Grade 10 Tboli learners in Haliland

Integrated School.

Research Questions

The study generally aimed to evaluate the effectiveness of Araling Panlipunan 10 CBM on the academic development of enrolled grade 10 Tboli learners in Haliland Integrated School in school year 2023-2024. Specifically, this study sought to answer the following questions:

1. What is the level of acceptability of CBM as evaluated by experts in terms of:
 - 1.1. content;
 - 1.2. organization;
 - 1.3. mechanics; and
 - 1.4. overall package?
2. Is there a significant difference between the pretest and posttest mean scores in the academic development of the control and experimental groups?
3. Is there a significant difference between the mean gain scores of the control and experimental groups in the academic development?

Literature Review

Culture-Based Modules

Culture serves as the fundamental basis for education, governance, and sustainable development (Lopez, 2018). While, education is the foundation of spreading and transforming culture (Singh, 2022).

Hence, culture-based education is an instructional method that centers on the core values, norms, beliefs, and practices of any culture (Singh, 2022) and numerous cultural workers and researchers have influenced this idea. However, the critical issue pertains to the efficient implementation of the concept in basic education, particularly in the most recent addition to the basic education program (Umal, 2021).

In this regard, Kartini et al. (2019) argues that instructional materials, such as modules, are crucial tools that should be present in lessons, mainly when dealing with students from varied origins and cultures. Given their frequent marginalization and exposure to a curriculum that predominantly favors one cultural perspective, it is crucial to provide a curriculum that integrates multiple perspectives (Singh, 2022).

With this, in order to effectively include indigenous knowledge into the curriculum and have a broader impact on students, it is necessary to practice the integration of indigenous information with intentionality and involve indigenous communities. This approach recognizes the potential benefits of adopting indigenous knowledge and emphasizes the importance of engaging with the communities from whom this knowledge originates (Reano, 2020, as cited in Moe, 2021).

Finally, according to Bibon (2020), culture-based education is founded on inclusive education practices. It aims to create a sense of belonging for students in the classroom by leveraging their cognitive structure and culture as a medium for instruction. Singh (2022) added that in today's globalized period, a society that has integrated cultural components and elements into its mainstream education system and can access materials in multiple languages and cultures has the benefit of playing a significant social role on the global stage.

Content

Cabantog (2022) asserts that culture-based education comprises three fundamental components: indigenization, localization, and contextualization. Indigenization is the primary component of a culture-based education. Indigenization refers to the incorporation of the first language, indigenous concepts and perspectives, local knowledge, communal funds of knowledge, cultural memories, and other related elements into the teaching and learning process, either as content or as the medium of instruction.

In addition, according to Muhammad et al. (2019), indigenized educational modules fundamentally set limits to what the students will learn and how he will learn. Also, they added that indigenized material makes students independent learners and arouses the learners' interest.

Furthermore, the study of Hipolito (2019) about effectiveness of indigenized learning module shows that innovative teaching approaches like the indigenization of learning module had a great influence in encouraging IP learners to perform better. The study clearly shows that the use of indigenized module was able to confirm that IP learners were active on the class especially when the lesson was explained in learners' indigenous language.

The second component of culture-based education is localization. Localization is a direct response to the traditional design of teaching which is inflexible and irrelevant to the learners' lives (Creus, 2019). Additionally, localization refers to the process of adapting the curriculum to incorporate information, materials, and cultural knowledge that are relevant to the learners' community (Cabantog, 2022).

Based on the DepEd Order No. 35 series of 2016, creating materials appropriate for the local context is a crucial responsibility of teachers. Since, the central office is unfamiliar with the local culture and knowledge of all areas in the country; therefore, the duty ought to fall to the teachers.

In addition, according to the journal of Laeen et al. (2019) about teachers' perception on localization of curriculum with emphasis on social studies lesson, localization involves the transmission of knowledge, cultural elements, and local values as a response to the globalizing trend. The study's findings indicate that social studies teachers see a lack of enthusiasm among students to fully comprehend subjects that are utterly unconnected to their local culture.

Another point to consider is the study of Pardilla (2020) about development of localized module as supplemental material in teaching social studies suggests that social studies textbooks should adapt their content to align with the cultural, geographic, and sociocultural contexts of the learners. This modification will enhance students' enjoyment and relevance of the learning experience to their everyday lives.

The third element of culture-based education is contextualization. Contextualization, as defined in DepEd Order No. 32 series of 2015, or the K-12 curriculum framework, refers to the educational practice of connecting the curriculum to a specific setting, situation, or area of application. This is done to ensure that the competencies taught are relevant, meaningful, and beneficial for all learners (Pariscal, 2022).

Utilizing instructional resources to contextualize information can stimulate learners' creative and imaginative cognitive abilities (Lorbis, 2019). Bulusan (2019, as cited in Pardilla, 2020) asserted that learning material achieves authenticity when it develops a robust connection to the motivation, needs, and histories of the learners.

Undoubtedly, Isagani's (2019) study revealed that the implementation of contextualization and localization proved to be highly beneficial in instructing Biology to Grade 7 students. The study conducted by Laylo (2019) yielded similar findings, indicating that the implementation of a localized and contextualized skills progression test at the end of classes has a good effect on students' understanding, attitudes, perspectives, and perceptions about colonialism and imperialism in West and South Asia.

Similarly, the study of Jimenez's (2020) on contextualized e-learning resources also demonstrated the advantages of such resources in enhancing learners' academic performance in Mathematics. The study provided evidence of the positive impact of contextualized e-learning resources on learners' academic work in the classroom. The study also recommended that to aid each learner in mastering various learning competencies; educators must consistently create contextualized e-learning materials.

Overall, the contextualized teaching and learning approach is a highly effective method that actively involves students in order to enhance learning and skill development. This approach is particularly suitable for teaching Araling Panlipunan, as demonstrated by the study of Lorbis (2019) on the use of contextualized teaching and learning approach in grade two Araling Panlipunan.

Organization

Organizing the topics is central in crafting a learning module. According to Ritter et al. (2007), the sequence in which content is presented can have varying effects on the quality and quantity of learning outcomes. While, Bruner (1966, as cited in Ritter et al., 2007) argues that organizing instruction in a structured manner has an impact on students' capacity to comprehend and apply what they have learned.

Another cognitive theorist, Azobel (1968, as cited in Ritter et al., 2007), supports Bruner's view that meaningful learning occurs by establishing connections between concepts and new topics through the structure of cognitive learning. According to Reigeluth (2009, as cited in Ritter et al., 2007), delivering education in a structured manner has an impact on the learning, retention, and motivation of learners.

Also, Landstrom (1970, as cited in Ritter et al., 2007) examined the impact of sequencing procedures and determined that sequencing enhances the acquisition and retention of textual information. Meaningful learning is accomplished by learners when they organize lessons in a specific order, connect new material to what they already know, and comprehend the connections between different components of learning (Reigeluth, 2009, as cited in Ritter et al., 2007).

Another point to consider in the organization of module are uniformity and lesson objectives. According to Ghai et al. (2022), the presentation of words, pictures, auditory information and organizing them leads for meaningful learning.

While, objectives of lessons are crucial in organizing learning materials. Learning objectives, also known as learning outcomes, are concise statements that define the expected achievements of students following instruction (Melton, 1997, as cited in Ghai et al., 2022). In addition, Murphy (2000, as cited in Ghai et al., 2022) argues that instructional materials for distance education achieve optimal efficacy when they are written of clearly defined objectives and learning activities that are seamlessly integrated into the learning unit.

Mechanics

Another area to consider in crafting a learning material is mechanics. The efficacy of a distance education program is significantly contingent upon the quality of its teaching materials (Padhi, 2004, as cited in Simui et al., 2017). An effectively developed interactive

instructional material is essential for achieving successful teaching and learning outcomes in all flexible learning modes (Kuruba, 2004, as cited in Simui et al., 2017).

However, it should be highlighted that students' performance is not always assured by ease and interest. Instructional designers must create a friendly tone in the interactional setting (Kühl & Eitel, 2016, as cited in Simui et al., 2017). Freeman (2004, as cited in Simui et al., 2017) suggests that employing an active voice and utilizing concise words can effectively maintain a friendly tone in instructional materials.

Undeniably, how the learning materials are viewed or perceived has been shown to influence adult learners' presumptions about how well they learned these subjects. Multiple studies have shown that words shown in large or clear fonts are more likely to be remembered compared to those presented in tiny or unclear fonts (Halamish et al., 2018).

Other areas to consider in crafting a module is developing critical and creative skills. Critical thinking and creative thinking abilities are the primary goal that must be developed and integrated into 21st-century learning activities. Creative thinking is a cognitive ability that enables learners to determine where and how to attain their goals. This skill is valuable in the current era of information and globalization, as it equips learners with the tools to adapt and thrive (Sibarani, 2013).

Therefore, teachers must create instructional resources that incorporate critical and creative thinking abilities. It is crucial because teachers should meticulously design teaching materials that align with the objective of enhancing students' capacity to independently explore knowledge and cultivate their thinking skills in various ways (Noorhapizah et al., 2020).

Overall Package

Overall Package is also considered in developing a learning module. The visual clarity of a page is a result of the graphics, text, space and layout used. The combination and arrangement of these elements affect how well the audience will process the information (Malamed, 2023).

Equally, typeface or font style is considered important in making a learning material. Font style imparts personality to a body of text. The choice of typeface can subtly elicit emotional reactions that influence our perception of content, such as perceiving it as neat, sharp, sophisticated, contemporary, cluttered, disorganized, or outmoded (BBC News, 2010).

When comparing studies that used different font styles, one striking difference was that those using serifs had far superior memory and recall than those using sans serifs. Times New Roman yielded more excellent understanding scores compared to Haettenschweiler. Thus, it may be inferred that Times New Roman is generally a better typeface for enhancing reading comprehension and memory in longer texts (Dressler, 2019).

However, previous research on the association between fonts and reading comprehension has primarily focused on font size rather than font design. Although the significance of font quality is not commonly emphasized in academic environments, it can have a crucial impact on learning and education (Dressler, 2019).

Lastly, color also plays a vital role in learning. Students learn more effectively and retain more information when presented with color printed materials. Multiple studies have repeatedly demonstrated that the use of color enhances memory recall more effectively than relying just on verbal or written symbols (A Case for Color in Your Curriculum, 2020)

Learners Academic Development

The evaluation of student's academic achievement is a fundamental component of the educational process. (Rono, 2013, as cited in Ternenge & Turkoma, 2021). In fact, academic achievement is a critical objective of the education system, and its accomplishment significantly contributes to societal growth and the enhancement of welfare levels (Ozcan, 2021).

On top of that, Ozcan (2021) expounds the concept of academic achievement by citing the ideas of Carter & Good (1973), Ahmann & Glock (1975), and Cox (1990), academic achievement encompasses the knowledge, skills, accomplishments, and growth that teachers impart to students in educational institutions. It involves the changes in student behavior across all curriculum domains, excluding psychomotor and affective domains. Furthermore, he emphasized that the primary and essential objective of educational institutions is to enhance student academic achievement.

Similarly, the study of Betlen (2021) about the effect of modular learning approach on the academic achievement of students cited different studies about the effectiveness of modular approach in teaching. For instance, a study on the quadratic function module demonstrates that implementing a modular approach to instruction enhances student performance. The implementation of the module as a method for remedial instruction has resulted in improved student performance (Melad, 2016).

Furthermore, Satyarthi (2021) demonstrated in their published research on effective learning strategy for secondary school students that the modular approach to teaching was better to the traditional teaching style. In addition, Naboya (2019) concluded that utilizing a modular approach while instructing inorganic chemistry is more efficacious than traditional strategy. Khalil and Yousuf (2020) also revealed that modular approach teaching improves the academic achievement of secondary school mathematics students.

The study conducted by Valencia (2020) on the implementation of a modular method in teaching Science 10 demonstrated a considerable improvement in student performance, resulting in a commendable level of competence. It unequivocally demonstrates that the strategy has established a crucial connection in enhancing students' academic achievement.

Finally, the study of Ambayon (2020) about the modular-based approach and students' achievement revealed that the engagement of a modular-based strategy in teaching has been found to be more effective than traditional teaching methods. It is because, in the modular approach, students are able to learn at their own pace, leading to a better academic performance. The learning approach is characterized by unregulated self-learning, where immediate feedback is given to practice exercises, hence stimulating students and fostering curiosity. Clearly, the modular approach improves student involvement in the classroom by efficiently accomplishing immediate tasks.

Methodology

Research Design

This study employed both descriptive-evaluative and pretest-posttest experimental research designs. The descriptive-evaluative design was used by experts to evaluate the level of acceptability of the Araling Panlipunan 10 CBM in terms of content, organization, mechanics, and overall package. While, the latter research design was utilized to assess the effectiveness of the CBM on the academic development of the participants of the study.

Descriptive research is a suitable option for the objective of this research is to determine the quality of the developed module (McCombes, 2022). On the other hand, experimental research was used in controlling the control group and manipulating the experimental group to determine if the academic development of the learners were directly caused by the manipulation (Maheshwari, 2017). The gathered data were organized, described, and tabulated to yield answers to the research questions.

Participants

This study involved 1 Tboli AP teacher, 3 master teachers in Araling Panlipunan in Schools Division of South Cotabato, 1 language professor in Sultan Kudarat State University-Access and 2 evaluators from National Commission on Indigenous Peoples- Lake Sebu who validated the acceptability of CBM's content, organization, mechanics and overall package.

Furthermore, the 22 enrolled grade 10 Tboli learners were the participants of this study because it appears on the consolidated school report in the previous year that the final average grade of Grade 10 is comparatively lower (81.5) than the mean scores for Grade 7 (83.5), Grade 8 (85.75), and Grade 9 (84.25) learners.

Total population, systematic and random sampling techniques were used in this study. The researcher chose to study the entire population of grade 10 due to a small population size of learners in Haliland Integrated School.

Moreover, systematic sampling technique was used in creating two groups. This sampling technique helped the researcher ensure that the two groups have the same level of intellectual capacity. In creating the two groups, the researcher ranked the participants from highest to lowest according to their general average in Araling Panlipunan during their 9th grade. Participants in an even number ranks were one group and participants in an odd number ranks were another group.

Further, in identifying which of the two groups will be the control or experimental group, random sampling using the lottery method was used. The control group used the SLM from the division's office of South Cotabato, while the experimental group utilized the CBM made by the researcher.

Instrument

There are two sets of research tools used in this study but before these were administered the researcher initially developed a CBM in Araling Panlipunan for grade 10 Tboli learners. The title of module is Kut Adat Ne Kut Kmo Be Kut Benwu and it is translated as Culture and Society. Araling Panlipunan 10's Most Essential Learning Competencies served as the basis for the modules' content. The modules are bilingual learning materials. Filipino was the main medium of instruction in accordance to section 8 of Executive Order No. 210 s. 2013 titled Establishing the Policy to Strengthen the Use of the English Language as a Medium of Instruction in the Educational System (Executive Order No. 210, S. 2003 | GOVPH, 2003). Since the participants are Tbolis, then Tboli language was integrated and was used as a second medium of instruction because IP students were greatly motivated to improve their performance with the help of an indigenized learning module (Hipolito, 2019).

The first tool is the SKSU-Learning Material Evaluation Tool. This tool was used by seven (7) expert evaluators who assessed the modules' quality and acceptability. The tool obtained a content validity index of 1 S-CVI/AV, which is excellent. A minimum 0.80 for both S-CVI/AV and S-CVI/UA is considered acceptable, while a value of 0.90 or above would be excellent (Pilot et al., 2007 as cited in Haidari & Uzon 2019). The SKSU Learning Material Evaluation Tool is a Likert Scale questionnaire which consist of 4 quality indicators and has 10 items in each indicator. The indicators are content, organization, mechanics and overall package. Items on the evaluation were answered through a 5-point Likert Scale. Participants were asked to rate the extent of each item as Very High (5), High (4), Moderate (3), Less (2) and Least (1). After it passed, it was then used in the evaluation of CBM in Araling Panlipunan.

The second tool was the multiple-choice questionnaire. To determine the academic development of grade 10 Tboli learners, the researcher constructed an 80-item test for validation and reliability test. The 3 master teachers in Araling Panlipunan checked the pre-constructed testing materials and table of specification for comments and suggestions. The items on the questionnaire were based on the five (5) topics with corresponding MELCs of Araling Panlipunan 10 for the first quarter. There are fifteen (15) items for konsepto at konteksto ng kontemporaryong isyu, fifteen (15) items for konsepto at iba't ibang uri ng suliraning pangkapaligiran, fifteen (15) items for mga paghahanda sa panganib na dulot ng mga suliraning pangkapaligiran, fifteen (15) items for mga tugon sa hamong pangkapaligiran and twenty (20) items for mga hakbang sa pagbuo ng community-based disaster risk reduction management plan. Also, the items on the questionnaire were made according to the Bloom's Taxonomy. There are twenty (20) items for remembering, fifteen (15) items for understanding, ten (10) items for applying, fifteen (15) items for analyzing, ten (10) items for evaluating and ten (10) items for creating. After it was validated and underwent reliability test, the researcher came up with a 50-item multiple-choice questionnaire. The multiple-choice questionnaire with 50 items varying questions obtained a KR20 of 0.92, which is excellent in terms of reliability. After which, this questionnaire was validated again by master teachers for content validity. Once passed, it was then administered as pretest and posttest of the participants.

Procedure

After the researcher had established the acceptability of the modules, validity and reliability of the instrument with the approval of the thesis advisory committee, and permit from the Regional Director of the National Commission on Indigenous Peoples (NCIP) the researcher then secured a certification from the Dean of the Graduate School to gather data. The letter of permissions were forwarded to the schools' division superintendent, district supervisor, principals of Haliland Integrated School and community elders. The researcher separated the classroom of the control group and experimental group. The distance of the two classrooms from each other is 62 meters. Before the conduct of the study, the researcher measured the sound level from room of experimental group to the room of control group by using a Benetech sound level meter. The measurement of loudness is quantified using the decibel, a unit of relative loudness. The sound level meter recorded a minimum of 38.7 dBA and a maximum of 60.7 dBA. The minimum level of 38.7 dBA denotes periods or locations with relatively low sound levels, while the maximum of 60.7 dBA suggests higher good intensity or noisier situations. To interpret, the absolute minimum audible sound level for humans is 0 decibels, the sound of a typical conversation is about 60 decibels, sound in a quiet room is 40 decibels and the sound of a faint whisper is 30 decibels (Stangor, 2014). By doing this procedure the researcher's certainty increased that the manipulation was responsible for the study outcome. After the approval of the letter of permissions, the researcher personally distributed to the participants the instrument. He then conducted a pretest to the control and experimental groups. After which, the researcher used CBM to the experimental group and SLM from the division to the control group. During the conduct of the study, the CBM was not allowed to be brought outside the classroom. This increased the certainty of the researcher that there has no leakage of information from experimental group to control group and guaranteed that the manipulation really resulted the outcome. Finally, at the end of the quarter, a parallel posttest was administered. The data gathered were tabulated with the help of the statistician. Analyses was done based on the problem statement.

Data Analysis

After the conduct of the study, the data were gathered, collected, tallied, and correspondingly summarized by the researcher. The data gathered from validated test and questionnaires were subjected to statistical treatment in order to ensure the reliability of the result.

The following were the statistical tools used to answer the problems posed in this study:

Mean and Standard Deviation were employed in the evaluation of experts in terms of content, organization, mechanics and overall package of the developed CBM in Araling Panlipunan 10. Mean and Standard Deviation were also used in evaluating the level of academic development of control and experimental groups in pretest and posttest.

T-test analysis was applied in the computation of the significant difference between the pretest and posttest mean scores in the academic development of grade 10 Tboli learners in control and experimental groups. T-test analysis was also used in the computation of the significant difference between the mean gain scores of the control and experimental groups in academic development.

Ethical Considerations

This study adhered to ethical considerations by addressing the ethical concerns of Indigenous People in the community through compliance with the research provisions and guidelines pertaining to Indigenous People, as stipulated by the National Commission on Indigenous Peoples (NCIP) Administrative Order No. 1 series of 2012.

The researcher applied for Certificate of Validation and Certificate of Compliance with IKSP Guidelines on Academic Research and Research in Aid of Policy Development in the NCIP Regional Office. The researcher then asked approval from the community to conduct research by presenting the study to the members of the Indigenous Political Structure (IPS) of Lake Sebu through a consultative community assembly. Lastly, the researcher committed to follow all the terms and conditions from the community stated in the memorandum of agreement.

The researcher also considered two DepEd Orders, which are DepEd Order no. 51 s. 2014 (National Indigenous Peoples Education (IPEd) Policy Framework) and DepEd Order no. 62 s. 2011 (Adopting the National Indigenous Peoples (IP) Education Policy

Framework), which both establish policy frameworks for the education of indigenous peoples.

Finally, the researcher sent out consent letters to get parental approval for their children to participate in the study. The researcher then has proofs that the IP students' parents permitted them to participate in the study in the form of legally binding letters. In order to safeguard the individuals' identities, the researcher maintained the data's confidentiality and express the results in general terms.

Results and Discussion

Table 1. *Summary of the Level of Acceptability of Culture-based Module*

<i>Culture-based Modules</i>			
<i>Indicators</i>	<i>Mean</i>	<i>SD</i>	<i>Verbal Description</i>
1. Content	4.73	0.44	Very High
2. Organization	4.67	0.48	Very High
3. Mechanics	4.74	0.42	Very High
4. Overall Package	4.85	0.29	Very High
Mean	4.75	0.41	Very High

The overall mean score of the level of acceptability of CBM across four indicators is very high ($M=4.75$, $SD=0.41$), which indicates a notably high acceptance of the CBM among the validators, meeting between 91-100% of the quality expectation. Additionally, out of four indicators, the overall package indicator received the highest mean ($M=4.85$, $SD=0.29$) while the organization indicator attained the lowest mean ($M=4.67$, $SD=0.48$). However, even if there is a numerical difference between the two, still both received a very high level of acceptability. Thus, the result signifies a positive response to the content, organization, mechanics and overall package of the modules.

The result of the validation on the CBM in Araling Panlipunan builds up the study of Reano (2020) that the incorporation of indigenous knowledge into the curriculum must be intentional and engage indigenous people, as it has the potential to improve more students in any learning area.

Table 2. *Results of the t-test Analysis of Learners' Academic Development in the Pretest and Posttest across Groups*

	<i>Pretest</i>		<i>Posttest</i>		<i>Df</i>	<i>t</i>	<i>p-value</i>
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>			
Control Group	73.42	6.13	79.17	9.23	10	3.0928	0.0114
Experimental Group	72.45	5.61	85.00	6.43	9	10.95	0.0000

Since the p-value of 0.0114 is less than the alpha level of 0.05, hence, the difference of pretest and posttest of control group is statistically significant. It means that the posttest ($M=79.17$, $SD=9.23$) is relatively higher than the pretest ($M=73.42$, $SD=6.13$). While, the p-value of 0.0000 is less than the alpha level of 0.05, thus, the difference of pretest and posttest of experimental group is statistically significant. It also means that the posttest ($M=85.00$, $SD=6.43$) is relatively higher than the pretest ($M=72.45$, $SD=5.61$). Given the findings we can decide to reject the null hypothesis.

When comparing the two groups, it is evident that both groups exhibit statistically significant differences in their pretest and posttest scores regardless of the strategy used. Nevertheless, the result suggests that the experimental group experienced a more significant academic development than the control group.

The glaring and statistically significant change of the experimental group is attributed to the learner's exposure to the highly acceptable content, organization, mechanics and overall package of the CBM. The result affirms the Socio-cultural Theory of Cognitive Development of Lev Vygotsky (1934) 1978. The primary premise of this theory is that a person's cultural environment significantly impacts his or her cognitive growth (Cherry, 2022). The development of these modules amplified Vygotsky's claim that learning is influenced by culture and that children from many cultures adopt distinct learning styles (Cherry, 2022). The findings align to the study of Hipolito (2019) that innovative teaching approaches like the indigenization of the learning module significantly impacted the motivation and academic performance of IP learners. The findings also back up the study of Melad (2016) that implementing a modular approach in teaching enhances student performance.

Table 3. *Results of the t-test Analysis of the Mean Gains in Learners' Academic Development between Groups*

	<i>Control Group</i>		<i>Experimental Group</i>		<i>Df</i>	<i>t</i>	<i>p-value</i>
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>			
Academic Development	5.75	6.20	12.55	3.72	21	3.149768	0.0048

Since the p-value of 0.0048 is less than the alpha level of 0.05, hence, there is a significant difference between the mean gains of control and experimental group. It means that the mean gain ($M=12.55$, $SD=3.72$) of experimental group in academic development is relatively higher than of the control group ($M=5.75$, $SD=6.20$). Thus, the researcher can reject the null hypothesis.

It is evident that both groups exhibit academic development regardless of the strategy used. However, the intervention in the experimental group had a more significant effect on the academic development of the learners in comparison to the control group, in fact, there is a difference of seven in their mean gain scores. This result is attributed to the learner's exposure to the highly acceptable CBM with a high acceptability rating of its content, organization, mechanics and overall package.

This finding strengthens Jerome Bruner's Theory of Learning and Cognitive Development which believes that culture and language plays a crucial role in cognitive development, which occurs in a spiral fashion with children revisiting basic concepts at increasing levels of complexity and abstraction (Mcleod, 2024). Additionally, this finding reinforces the study of Laeen et al. (2019) that students exhibit a lack of motivation when it comes to learning concepts that are utterly unconnected to their local culture, but they are eager to study concepts that are relevant to their own culture.

Conclusions

The CBM, which integrated the community's environmental issues, community-based disaster risk reduction management and language in teaching Araling Panlipunan, has been found effective in enhancing grade 10 Tboli learners' academic development. The study's outcome is attributed to a highly acceptable module as evaluated by experts and it indicates that the module was well edited and therefore significantly impacted participants' learning gains on the 5 most essential learning competencies in Araling Panlipunan for the first quarter.

Additionally, the CBM reaffirms the Socio-cultural Theory of Cognitive Development of Lev Vygotsky and Jerome Bruner's Theory of Learning and Cognitive Development that both state that a person's culture amplifies his cognitive development. Since, the module aligned with K-12 curriculum which emphasizes the importance of integrating culture across all instructions, this approach not only enhances learners' academic development but also contributes to sustainable community development by valuing the community's way of life and empowers students to connect with their heritage and promotes a holistic approach to learning that benefits both individuals and communities.

Finally, the CBM in Araling Panlipunan allowed Tboli learners to foster deeper understanding of their community's contemporary issues and the utilization of CBM allowed the researcher to create a classroom where diversity foster profound understanding and proved that expertise knows to boundaries.

Based on the findings and conclusion of the study, the researcher presents the following recommendations:

Grade 10 Araling Panlipunan teachers teaching Tboli learners may consider to use the CBM in their classes to increase their learners' academic development.

Araling Panlipunan teachers may consider to practice culture-based modular approach in teaching Araling Panlipunan to encourage learners to study and improve their academic development.

Araling Panlipunan teachers, researchers and writers may conduct a qualitative study on the experiences of the students in using the module.

References

- A Case for COLOR In Your Curriculum. (2020). us.riso. Retrieved July 1, 2023, from <https://us.riso.com/wp-content/uploads/2020/02/R1169-Case-for-Color-Revised-Press-10-08-19.pdf>
- Ambayon, C. M. (2020). Modular-Based Approach and Students' Achievement in Literature. *International Journal of Education and Literacy Studies*, 8(3), 32. <https://doi.org/10.7575/aiac.ijels.v.8n.3p.32>
- BBC News. (2010, July 20). Do typefaces really matter? BBC News. <https://www.bbc.com/news/magazine-10689931>
- Betlen, E. (2021, July 7). Effect of modular learning approach on the academic achievement of students. *Global Scientific Journals*, 9(7). https://www.globalscientificjournal.com/researchpaper/EFFECT_OF_MODULAR_LEARNING_APPROACH_ON_THE_ACADEMIC_ACHIEVEMENT_OF_STUDENTS.pdf
- Bibon, M. B. (2020, October 20). The Use of Culture-Based Module Integrating Folk Hunting Practices in Cagraray Island, Philippines for Teaching Biodiversity. © 2017-2021 *International Journal of Formal Sciences: Current and Future Research Trends (IJFSCFRT)*. https://ijfscfjournal.isrra.org/index.php/Formal_Sciences_Journal/article/view/586
- Cabantog C. (2022, June 8). Balik kasaysayan 2022 culture-based education. Powerpoint slides.
- Cherry, K. (2022). What Is Sociocultural Theory? Verywell Mind. <https://www.verywellmind.com/what-is-sociocultural-theory-2795088>
- Creus, B. (2019, January 18). The Effectiveness of Using Localized Instructional Materials in the Performance of Grade Seven Food Technology Students in Amaya School of Home Industries. <https://ojs.aaresearchindex.com/index.php/AJMRA/article/view/4268>

- Department of Education. (2016, June 7). The learning action cell as a k to 12 basic education program school-based continuing professional development strategy for the improvement of teaching and learning. https://www.deped.gov.ph/wpcontent/uploads/2016/06/DO_s2016_035.pdf
- Department of Education. (2022). Balik kasaysayan program. <https://www.deped.gov.ph/wp-content/uploads/2020/06/Balik-Kasaysayan-FAQ.pdf>
- Department of Education. (2021, December 8). DepEd marks 1st decade of indigenous peoples education program (IPed) with 2.5M learners served. <https://www.deped.gov.ph/2021/10/08/deped-marks-1st-decade-of-indigenous-peoples-education-program>
- Deped-SOCCSKSARGEN. (2022). Region Memorandum CLMD 140 PRE-WORK ON BALIK-KASAYSAYAN WORKSHOP SEMINAR. <https://depedroxii.org/download/region-memorandum-clmd-140-pre-work-on-balik-kasaysayan-workshop-seminar/>
- DO 32, s. 2015 – Adopting the Indigenous Peoples Education Curriculum Framework | Department of Education. (2015, July 29). <https://www.deped.gov.ph/2015/07/29/do-32-s-2015-adopting-the-indigenous-peoples-education-curriculum-framework/>
- Dressler, E. (2019). Understanding the Effect of Font Type on Reading Comprehension/Memory under Time-Constraints [MA Thesis]. University of Nebraska at Omaha.
- Executive Order No. 210, s. 2003 | GOVPH. (2003, May 17). Official Gazette of the Republic of the Philippines. <https://www.officialgazette.gov.ph/2003/05/17/executive-order-no-210-s-2003/>
- Ghai (2022). Learning Objectives – CTE Resources. (n.d.-b). <https://cteresources.bc.edu/documentation/learning-objectives/>
- Gubalani, R. (2021, November 3). DepEd-12 boosts rollout of IP education program. Philippine News Agency. <https://www.pna.gov.ph/articles/1158634>
- Halamish, V., Nachman, H., & Katzir, T. (2018). The Effect of Font Size on Children's Memory and Metamemory. *Frontiers in Psychology*, 9. <https://doi.org/10.3389/fpsyg.2018.01577>
- Heidel, E. (2023). KR-20 (Kuder-Richardson 20). Scale statistics. <https://www.scalestatistics.com/kr20.html#:~:text=Kudar%2DRichardson%2020%20cannot%20be,the%20>
- Hipolito, V. V. (2019, December 24). Effectiveness of Indigenized Learning Module for Grade II Ayta Pupils. <https://www.asianjournal.org/online/index.php/ajms/article/view/134>
- Isagani, D., Jr. (2019, January 18). Localization and Contextualization in Teaching Biology for Grade 7 Students of Paliparan National High School for School Year 2018-2019. <https://ojs.aaresearchindex.com/index.php/AAJMRA/article/view/8816>
- Jimenez, E. C. (2020). Contextualized E-Learning Resource: A Tool for Stronger Academic Platform. *International Journal of Case Studies in Business, IT, and Education (IJCSBE)*, 4(2), 110-116. DOI: <http://doi.org/10.5281/zenodo.4018344>
- Laeen, S. J., Ayati, M., Sani, H. J., & Booreng, M. A. (2019). A Teachers Perception on Localization of Curriculum with Emphasis on Social Studies Lesson. *International Journal of Higher Education*, 8(7), 84. <https://doi.org/10.5430/ijhe.v8n7p84>
- Laylo, D. (2019, January 18). Localized and Contextualized Skills Progression: tool in Improving the Academic Performance in Araling Panlipunan of Grade Seven Students of Bagbag National High School. <https://ojs.aaresearchindex.com/index.php/AAJMRA/article/view/8818>
- Llego, M. A. (2022, September 1). How to contextualize curriculum for improved academic achievement. TeacherPH. <https://www.teacherph.com/contextualize-curriculum/>
- Lopez F. (2018). Philippine culture-based education: responding to the challenges of a nationalist education. Powerpoint slides. http://web.nlp.gov.ph/plcon2018/sites/default/files/philippine_culture-based_education.pdf
- Lorbis J.C. (2019, April). Utilization of contextualized teaching and learning (ctl) approach in grade two araling panlipunan [Master's Thesis, Southern Luzon State University]. (ED603874).ERIC. <https://files.eric.ed.gov/fulltext/ED603874.pdf>
- Malamed, C. (2023). How Visual Clarity Affects Learning. The eLearning Coach. <https://theelearningcoach.com/media/visual-clarity/>
- Malipot, M. (2020, October 24). Gov't urged to ensure IP access to culture-based education. Manila Bulletin. <https://mb.com.ph/2020/10/24/govt-urged-to-ensure-ip-access-to-culture-based-education/>
- McCombes, S. (2022, October 10). Descriptive Research | Definition, Types, Methods & Examples. <https://img1.wsimg.com/blobby/go/7c4463e3-109c-48af-b9be-98e22cdf2116/downloads/42864873588.pdf>
- Mcleod, S., PhD. (2023). Vygotsky's Sociocultural Theory of Cognitive Development. Simply Psychology. <https://www.simplypsychology.org/vygotsky.html>

- McLeod, S., PhD. (2023a). Likert Scale Definition, Examples and Analysis. Simply Psychology. <https://www.simplypsychology.org/likert-scale.html>
- Moe L. (2021). Effect of culture-based education on retention of first-time degree-seeking, 1st-year indigenous college students [Doctoral dissertation, Walden University]. Walden Dissertation and Doctoral Studies Collection. <https://scholarworks.waldenu.edu/dissanddoc/>
- Muhammad, A., Lodhi, M. A., Munawar, R., & Ibrar, S. N. (2019). Impact of indigenization of English materials on reading and writing proficiency of ESL learners. ResearchGate. https://www.researchgate.net/publication/351935679_Impact_of_indigenization_of_English_materials_on_reading_and_writing
- Naboya, M. D. (2019). Effect of modular approach on the level of achievement of students in inorganic chemistry. ResearchGate. https://www.researchgate.net/publication/339198899_effect_of_modular_approach_on_the_level_of_achievement_of_students
- Noorhapizah, Suriansyah, A., & Pratiwi, D. A. (2020). Learning Material Development Containing Critical Thinking and Creative Thinking Skills Based on Local Wisdom. <https://doi.org/10.2991/assehr.k.201204.007>
- Özcan, M. (2021, June 30). Factors Affecting Students' Academic Achievement according to the Teachers' Opinion. <https://dergipark.org.tr/en/pub/erjournal/issue/64240/796066>
- Pardilla J. (2020, October). Development Of Localized Module As Supplemental Material In Teaching Social Studies: A Literature Review. Global Scientific Journal. 8, (10). https://www.globalscientificjournal.com/researchpaper/DEVELOPMENT_OF_LOCALIZED_MODULE_AS_SUPPLEMENTAL
- Pariscal, D. R. P., & Gonzales-Aboy, I. (2022). Practices in the contextualization of the English curriculum in the public secondary schools. Technium Social Sciences Journal, 37, 60–75. <https://doi.org/10.47577/tssj.v37i1.7594>
- Pepano, C. (2019), Localized and contextualized module in teaching contemporary issues. Ascendens Asia Journal of Multidisciplinary Research Abstracts. Vol. 3 No. 2F. <https://ojs.aaresearchindex.com/index.php/AAJMRA/issue/view/61>
- Ritter, F. E., Nerb, J., Lehtinen, E., & O'Shea, T. (2007a). In order to learn. In Oxford University Press eBooks. <https://doi.org/10.1093/acprof:oso/9780195178845.001.0001>
- Rogers, R. (2020, November 30). Saving a language, preserving a culture. UNM Newsroom. Retrieved July 1, 2023, from <http://news.unm.edu/news/saving-a-language-preserving-a-cultures>
- Simui, F., Mundende, K., Mwewa, G., Kakana, F., & Namangala, B. (2017). Distance Learner's Perspective on User-friendly Instructional Materials at the University of Zambia. Journal of Learning for Development, 4(1). <https://doi.org/10.56059/jl4d.v4i1.154>
- Singh, J.P. (2022, May 10). Culture-based education. International journal of multidisciplinary educational research. Volume 11 (issue:4(5)) DOI: <http://ijmer.in.doi./2022/11.04.152>
- Stangor, C. (2014, October 17). 5.3 hearing. Pressbooks. <https://opentextbc.ca/introductiontopsychology/chapter/4-3-hearing/>
- Ternenge T. & Turkoma T. (2021, May 27). Socio-cultural and economic factors as correlates of academic performance of undergraduates in the department of library and information science, Sultan Kudarat State University, Makurdi. Library Philosophy and Practice (e-journal). <https://digitalcommons.unl.edu/libphilprac/5758/>

Affiliations and Corresponding Information

Aleazar R. Sabio

Haliland Integrated School

Department of Education – Philippines

Mary Grace O. Gallego

Sultan Kudarat State University – Philippines