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Culture-Based Self-Learning Module and Students' Performance in Physical Education

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A B S T R A C T

Self-learning module (SLM) in Physical Education (PE) enhances students' work ethics, particularly in culture-based relations, through its enriched characteristics. The main goal of this study was to evaluate the potency of the developed Culture-Based Self-Learning Module and its impact on students' performance in PE. The study employed Descriptive-Evaluative Research Design and Quasi-Experimental Research Design, and a t-test was used to determine the significant difference between the pretest and post-test scores of the 30 control and experimental groups of students at Lamian National High School who were officially enrolled in the school year 2022 - 2023. The results revealed that the developed module received an "excellent" rating, signifying its high quality and effectiveness across various aspects. In addition, students' performance had increased in small numbers and was statistically interpreted to have a significant difference between the pretest and post-test in the control group. On the other hand, results revealed that the scores between the pretest and post-test increased explicitly and showed statistically significant differences. Furthermore, results showed a significant difference in mean gain scores between the control and experimental. The developed Culture-Based SLM could significantly impact students' performance, engagement, cultural competence, retention rates, and educational experiences.

A R T I C L E I N F O

1. INTRODUCTION

Self-Learning Module (SLM) is a systematized compendium of instructions that facilitates students to master a body of knowledge or a complex process without the teacher's presence. In PE, the SLM is more helpful to students due to its enriched characteristics as it allows them to establish strong work ethics, especially in culture-based relations. Schools have come a long way since students and teachers have discernment that this multifaceted subject can provide more benefits to the students.

SLM fulfills the role of a PE teacher, and students learn to take responsibility and develop their ideas. Consequently, PE teachers ought to motivate students to learn about their own ethnic and cultural heritage through research and education by enabling students to comprehend their culture, Tboli, and variations and restraints, among others. Thus, it makes students feel a sense of belonging as it necessitates inclusive education (Bibon, 2020).

Integrating cultural beliefs in teaching has a good impact on numerous factors. It fosters a sense of belonging and identity and increases community participation. It also promotes respect and understanding of history and cultural heritage. Cultural heritage includes old items and contemporary objects, behaviors, and locations that have cultural significance for current generations (TK, 2022). It indicates that the community's cultural bearers are important in teaching and learning. Thus, PE students are taught that they have a responsibility to value, develop, and conserve the culture and its environment. PE students build competencies and cultural abilities that are necessary for connecting with people all over the world. Culture is believed to foster a sense of national pride in individuals and shapes their national identity. Hence, preserving cultural memory will lead to a better understanding of the country's fate in the global society and community of nations.

Cultural integration in instruction places students in a vivid and meaningful authentic situation. It allows students to appreciate the culture more, and this can be carried out through crafting lessons and activities that focus on the interests and environment of the students (Bonganciso, 2016). In the Philippine setup, culture-based teaching can be complemented with contextualized curricula in which there is an aim for the students to see a clear link between the experiences of students' culture and the topic knowledge as it is generally applied in actual practice.

Suardana *et al.* (2018) conducted a study on culture-based education, and evidence proves the claim that one's cultural knowledge positively impacts students' achievement. Although there is an existing program for Indigenous Peoples (IPs) through the implementation of Indigenous Peoples Education, there is still a need to address the needs in terms of responsive and culture-based instructional materials that are culturally rooted in the culture of Tboli, especially the development of SLMs. In the study of Osuala and Oluwatosin (2017), it was discovered that instructional guides excite and grow PE students' interests and contribute to increased respect for PE teachers' topic knowledge. The nature of learning and the large range of PE students' skills in the normal classroom need a high level of PE instructor expertise and experience in subject matter presentation. On the other hand, the educational experiences of the Tboli people are centered around the tribe's traditional music, dances, instruments, chants, weaving, epics, and embroidery. Thus, PE teachers also educated their tribe's children about sports, spiritual activities, body hygiene, health protection, and the preparation of natural medicines to treat illnesses. It emphasized the need for environmental stewardship and traditional leadership. Hence, the traditional art of PE teachers focuses on educating not just the youth but also all members of their tribe on how to paint with mud that comes from their ancestors' land. Significantly, this gap claims to emphasize the necessity of conserving

Tboli culture for future generations, notably through starting and incorporating it into the learning module of teaching PE since there is a culture-based self-learning module in the Division of South Cotabato, particularly at Lamian National High School.

The study aimed to evaluate the potency of the developed Culture-Based SLM that relates the developed module and the student's performance in PE 7 at Lamian National High School, South Cotabato, for the Academic Year 2022 – 2023. Also, it aimed to know the impact of the developed module on the learning performances of the students.

2. LITERATURE REVIEW

Some researchers discussed Self-Determination Theory (SDT) served as the foundation for this investigation. SDT was a psychological outline emphasizing human motivation and the circumstances that ease optimal growth and learning. Thus, PE students were likelier to be motivated, engaged, and effective in their learning activities.

In addition, the Theory of Modular Learning (Guilhardi & Church, 2007) claims that the method where learning outcomes are the main focus, especially in PE, and its effectiveness depends on how well outcomes are connected to PE student learning and course design. Together, these domains create a course that is constructively aligned. Identifying learning and teaching outcomes that successfully result in the realization of adequately assessed PE student outcomes is crucial for the curriculum to be creatively aligned.

Moreover, some researchers Lave and Wenger (1991) suggested that the notion of situated learning is a crucial aspect of practice theory and information literacy, stressing that learning is a socially situated activity in which the agent, activity, and the world mutually constitute each other rather than an internalized and individualistic practice. Hence, teaching positions involve PE students actively participating in a real classroom setting or a sports practice that may imitate a real game.

Furthermore, some researchers (Elger, 2007) developed the theory of academic performance (top), which defines 'perform' as the ability to generate a valued product, 'performer' as an individual or group that collaborates, and 'level of performance' as the location in an academic journey. He defines five components of performance levels: level of knowledge, level of skills, level of identity, personal variables, and fixed. The growth and development are fostered through acquiring and improving skills and knowledge and promoting enhanced PE productivity.

The proposed three axioms for effective performance include a performer's perspective, absorption in a stimulating environment, and reflective practice.

3. METHODS

The study used a quasi-experimental research design to evaluate Culture-Based SLM in PE VII and its impact on Tboli students at Lamian National High School in Surallah, South Cotabato (Maciejewski, 2020). It also used a descriptive-evaluative research design to validate the content, relevance, acceptability, instructional aspects, and language translation of teaching performing arts to the Tboli community (Alharbi, 2015). The study involved 60 Tboli students, divided into two groups: 30 experimental (Section A-Santan) and 30 control (Section B-Tulips). A complete enumeration sampling method was used to select respondents, focusing on specific features of the population. The Culture-Based SLM was evaluated for its effectiveness in teaching MAPEH VII dance to Tboli learners in PE. Certified Master Teachers assessed content, relevance, acceptability, instructional aspects, and language translation using a

survey instrument and a five-point Likert Scale questionnaire. The research was conducted at Lamian National High School, South Cotabato, using Tboli Folklore as a teaching method. The study involved various stakeholders, including the Dean of SKSU, the Schools Division Superintendent, the Tboli Indigenous Peoples Mandatory Representative, and the Principal. The study was conducted online and through home visitation, using Mosquera's Evaluation and Validation Instrument. A pretest was administered to determine students' achievements, and the K-12 Assessment Tool was used to evaluate their performance. A post-test was given to evaluate the module's acceptability, substance, and instructional quality. The study was approved by the IGS's Final Management. The study used statistical treatments to analyze raw data, comparing students' performance in pretest and posttests in both control and experimental groups. The T-test was used to find significant differences in mean gain scores and achievement. The Classroom Assessment for the K to 12 Basic Education Program was used to evaluate the results and measure the increase in students' academic achievement.

4. RESULTS AND DISCUSSION

As shown in **Table 1**, the content of the CBSLM was rated as "very satisfactory," which means it meets between 75 and 90% of the expected quality. The content was well received but may have some room for improvement. Like content, the relevance of the module was rated as "very satisfactory," meeting between 75 and 90% of expected quality. It resulted in the fact that the material being perceived was highly relevant to the audience. It signifies that the content of the module objectives is related to the desired student results for the part of the instruction.

Furthermore, acceptability was rated as "very satisfactory," meeting between 75 and 90% of the expected quality. It means that the module was well-accepted and user-friendly. The module's instructional aspects were rated as "excellent," meeting above 91% to 100% expected quality. The instructional design and methods used in the module were highly effective and well-received. On the other hand, language translation was rated as "excellent," meeting above 91% to 100% of the expected quality. It means that the quality of the translation was exceptionally high. One advantage of using modules for instruction is that PE students improve their self-study or learning skills. Hence, PE students actively participate in studying the concepts provided in the curriculum. It also fosters a sense of responsibility in completing the duties outlined in the module.

Generally, the result of the evaluated Culture-Based SLM was "excellent," indicating that it meets above 91% to 100% of the expected quality across all aspects. The result obtained was a strong attestation of the quality of the module. These ratings suggest the module was well-received and highly effective, particularly in its instructional aspects and language translation. However, there was still room for improvement in content and relevance, though it was labeled "very satisfactory."

It emphasized that culture-based education is a trend that stems from inclusive education approaches. It indicates that students should feel like they belong in the classroom by leveraging their cognitive structure and culture as teaching tools.

As shown in **Table 2**, the pretest and posttest scores of the students showed a slight difference in their learning performance as they had the conventional learning approach.

The result implied that students who had not been given the culture-based SLM performed a "satisfactory" result in their pre-test and a "fairly satisfactory" result in their post-test. Thus, a multifaceted approach, including teacher training, curriculum development, culturally relevant content, and personalized learning strategies, was crucial in addressing poor academic performance, like the culture-based SLM. Research-based interventions should be considered to improve PE students' academic performance.

Furthermore, Saqr *et al.* (2018), stressed that when student engagement occurs in dynamic learning settings through real activities. It may aid in developing deeper and more meaningful knowledge. Also, encouraging students to respond to arguments, discuss concepts, argue opposing views, offer ideas, and exchange insights and different points of view on the topics under discussion was effective.

Table 1. Quality of the Culture-Based SLM,

Quality of CBSLM	Mean	Description	Interpretation
Content	4.11	Very Satisfactory	Meets above 75–90% Quality
Relevance	4.09	Very Satisfactory	Meets above 75–90% Quality
Acceptability	4.16	Very Satisfactory	Meets above 75–90% Quality
Instructional Aspect	4.21	Excellent	Meets above 91-100% Quality
Language Translation	4.29	Excellent	Meets above 91-100% Quality
Overall Rating	4.23	Excellent	Meets above 91-100% Quality

Table 2. Level of Students' Performance in the Control Group.

Pretest			
Score Range	Descriptions	F	%
41 - 50	Excellent	0.0	0%
31 - 40	Very Satisfactory	0.0	0%
21 - 30	Satisfactory	10.0	33%
11 - 20	Fairly Satisfactory	20.0	67%
0 - 10	Poor	0.0	0%
Total		30.0	100%
Mean Score		17.7	Fairly Satisfactory
Post-test			
Score Range	Descriptions	F	%
41–50	Excellent	0	0%
31–40	Very Satisfactory	2	7%
21–30	Satisfactory	19	63%
11 - 20	Fairly Satisfactory	9	30%
0 - 10	Poor	0	0%
Total		30	100%
Mean Score		23	Satisfactory

As presented in **Table 3**, the results greatly increased the student's learning performance. The pre-test results showed that more students got a "fairly satisfactory" learning performance. On the other hand, post-test results showed one student got an "excellent" learning performance, and more got a "very satisfactory" learning performance compared to when the culture-based SLM was introduced to the PE students.

The findings suggested that the experimental group's pre-test and post-test mean scores differed significantly. The outcome indicated that the PE department's culture-based SLM greatly affected students' academic achievement. Because the module fosters involvement, a feeling of identity and belonging, and good PE teacher-student connections, it improves PE students' engagement, motivation, cultural competency, and comprehension.

Some researchers (Flores & Obod, 2023) found that culture-based SLM enhances learning by incorporating students' own culture and background, making them feel connected to the subject matter and increasing their cultural knowledge, creating a welcoming learning environment.

Table 3. Level of Students' Performance of the Experimental Group in the Pretest and Posttest.

Pretest			
Score Range	**Descriptions**	**F**	**%**
41 - 50	Excellent	0.00	0%
31 - 40	Very Satisfactory	0.00	0%
21 - 30	Satisfactory	4.00	13%
11 - 20	Fairly Satisfactory	22.00	73%
0 - 10	Poor	4.00	13%
Total		**30.00**	**100%**
Mean Score		**15.03**	**Fairly Satisfactory**
Posttest			
Score Range	**Descriptions**	**F**	**%**
41 - 50	Excellent	1.00	3%
31 - 40	Very Satisfactory	23.00	77%
21 - 30	Satisfactory	4.00	13%
11 - 20	Fairly Satisfactory	2.00	7%
0 - 10	Poor	0.00	0%
Total		**30.00**	**100%**
Mean Score		**34.03**	**Very Satisfactory**

The significant difference between the control group's students' pretest and posttest results is shown in **Table 4**. As previously mentioned, the control group's mean score in the pretest was 17.7, and its posttest score was 23, with a p-value of 0.000. The control group's performance significantly differed between the pretest and posttest results. It further implied that the control group had the lowest PE performance before using the developed culture-based SLM. The findings regarding cultural integration may have implications for our education system's educational policies and curriculum development. It may underscore the importance of designing inclusive and culturally relevant educational materials to support PE students who had started with lower baseline performance.

SLM can be designed to provide targeted support for low-performing students by addressing their specific learning needs (Bamba & Derecho, 2023). It might include additional resources, practice exercises, or explanations tailored to help struggling students grasp difficult concepts. Additionally, SLM usually lets PE students study at their speed, which is advantageous for people who find it difficult to keep up with the standard classroom pace. Low-performing PE students could take time to master concepts and skills.

Table 4. Significant Difference Between Students' Performance in Pre-test and Post-test of the Control Group.

	n	Mean (M)	Std. Deviation (SD)	t	df	*p*	Interpretation
Pretest	30	17.70	5.234	-3.860	58	0.000	Significant
Post-test	30	23.00	5.401				

The test results indicate that the average of the pretest of 17.70 (SD = 5.234) is statistically different from the average of the posttest of 23 (SD = 5.401), t = -3.860, *p* = 0.000.

As presented in **Table 5**, the students' mean score on the pre-test was 15.03, and their mean score on the post-test was 34.03, with a 0.000 p-value. This extremely low p-value indicates an exceptionally low probability of observing a test statistic as extreme as, or more powerful than, the one calculated (not provided) if the null hypothesis was true. The p-value offered compelling evidence that refuted the null hypothesis and showed that the means of the pre-tests and post-tests in the experimental group differed significantly.

The results showed a significant difference between the experimental group's pre-test and post-test scores regarding the students' performance. Strong evidence to reject the null hypothesis was demonstrated by the p-value of about 0.000, which supported the conclusion that performance had significantly improved between the pre-tests and post-tests. The significant improvement in the post-test was attributed to the effectiveness of the culture-based SLM in teaching PE. It also implied that culture-based SLM could significantly impact PE students' academic performance, engagement, cultural competence, retention rates, and educational experiences. These modules contributed to more inclusive and equitable educational practices by recognizing and valuing PE students' cultural backgrounds and identities.

Culture-based modules enhance learning by providing relatable content and examples, leading to increased participation and understanding of academic content. Smith *et al*. (2019) found that students using culture-based SLM in history courses performed better on assessments compared to traditional learning approaches.

Table 5. Significant Difference Between the Students' Performance in the Pretest and Posttest of the Experimental Group.

	n	Mean (M)	Std. Deviation (SD)	t	df	*p*	Interpretation
Pretest	30	15.03	4.335	-13.239	58	0.000	Significant
Posttest	30	34.03	6.557				

The test results indicate that the average of the pretest of 15.03 (SD = 4.335) is statistically different from the average of the posttest of 34.03 (SD = 6.557), t = -13.239, *p* = 0.000.

As shown in **Table 6**, the experimental group had a similarly higher score—24.533 with a standard deviation of 4.7867—than the control group, which had a mean gain score of 20.350 with a standard deviation of 4.6870. According to statistics, there was a significant difference between the experimental and control groups' mean gain scores, as indicated by the p-value of 0.001.

The PE group appeared to have improved more than the control group. It means that the efficacy of the PE teacher's use of the Culture-Based SLM in discussions was credited with the PE students' discernible learning improvement.

In addition, research has indicated that using culture-based SLM might increase PE students' academic performance. PE students are more likely to be engaged and motivated to learn when culturally relevant educational materials resonate with their experiences (Fu, 2018). It means that the PE students exposed to culture-based SLM in language classes displayed higher levels of participation and interaction in the classroom. Also, students who engage with culture-based materials gain a deeper awareness of different cultures and are better prepared to operate in varied situations.

Table 6. A significant difference between the mean gain scores of the control and experimental groups.

	n	Mean (M)	Std. Deviation (SD)	t	df	*p*	Interpretation
Experimental	30	24.533	4.7867	3.420	58	0.001	Significant
Control	30	20.350	4.6870				

The test results indicate that the average of the Experimental Group of 24.533 (SD = 4.7867) is statistically different from the average of the Control Group of 20.350 (SD = 4.6870), t = 3.420, p = 0.001.

5. CONCLUSION

Considering the study's findings, the developed Culture-Based SLM was an effective SLM that allowed Tboli students to learn and appreciate their culture. The developed module had signified high-quality and effective modules across various aspects of students' holistic development. Also, the set manual significantly impacted the student's performance compared to the conventional mode of the SLMs. The material enhanced students' engagement, motivation, cultural competence, and understanding of one's culture. Furthermore, with the noticeable improvement in the student's academic performance who had integrated the developed manual, the design of inclusive and culturally relevant educational materials was essential to support students who may start with lower baseline performance.

6. ACKNOWLEDGMENT

7. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. Authors confirmed that the paper was free of plagiarism.

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