

EXPLORING MATHEMATICS EMBEDDED IN THE CULTURAL ACTIVITIES OF SENIOR HIGH SCHOOLS IN THE JAMAN SOUTH MUNICIPALITY

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<https://doi.org/10.37602/IJSSMR.2026.9411>

ABSTRACT

The study explored mathematics embedded in the cultural activities of senior high schools in the Jaman South Municipality. From Our Lady of Providence Girls' Senior High School, simple random sampling was used to select three out of ten classes from form two and all the ten mathematics teachers were purposively chosen for the study. The results of the study were analysed using descriptive statistics. The findings showed that teachers integrate cultural mathematical practices, using traditional games and puzzles, inviting guest speakers, etc in their teaching.

Keywords: Ethnomathematics, Cultural Mathematics, Mathematics Education, Senior High School Mathematics, Culturally Responsive Pedagogy

1.0 INTRODUCTION

Global disparities between Mathematics taught in schools and mathematics practiced outside of school may be a role in students' struggles (Davies, Bishops, & Seah, 2009). For students to understand the practical and social ramifications of Mathematics, Chikodzi and Nyota (2010) contend that the linkages between Mathematics and culture in the teaching of Mathematics must be made. If a teacher of Mathematics is unable to make a connection between secondary school Mathematics and the students' culture, it is assumed that the students will not understand what they are being taught. The lack of a link between Mathematics taught in class and the students' extracurricular mathematical activities, claim (Chikodzi & Nyota, 2010; Madusise, 2014), is to blame for the poor performance. These researchers claim that teachers of Mathematics taught students as though Mathematics only exists in textbooks and has no practical use. Teachers of Mathematics put an inordinate amount of focus on covering the curriculum, at the detriment of students learning Mathematics topics in a meaningful way. Masingila (1993) asserts that instructors of Mathematics place an undue emphasis on teaching syntax (procedures) rather than semantics (meaning), which discourages students from using their intuitions in their academic work. In order to explore mathematics embedded in the cultural activities of senior high schools in the Jaman South Municipality, research was carried out in the Jaman South Municipality.

1.1 Research Objectives

The following research objectives served as the basis for the current study to:

1. determine the ethnomathematics content knowledge used by teachers of Mathematics in the Jaman South Municipality
2. investigate how Jaman South teachers of Mathematics integrate ethnomathematics in their lessons.
3. explore how teaching and learning processes at the senior high school level can be connected to the Mathematics embedded in the Jaman South cultural activities.

2.0 LITERATURE REVIEW

2.1 Integration of ethnomathematics

The incorporation of ethnomathematics into Mathematics lessons encouraged by several academics (D'Ambrosio, 1985; Barton, 1996; Eglash, 1997; Rosa & Orey 2010), although this should not be thought of as an easy assignment for the teachers. Despite the fact that Mathematics is used across the globe, this assignment is difficult for the teacher to complete because it is designed to help students solve difficulties in their everyday lives (Borba, 1990). Because they are concealed, the mathematical ideas discovered in those activities must first be mathematically formulated before being introduced to classroom Mathematics. The challenge, according to Seepe (2000), is to locate and identify the scientific abilities, know-how and procedures that are deeply ingrained in the cultural norms of the majority-African population. Masingila (1993) lists three ethnomathematical elements that should be targeted when incorporating them into the teaching of Mathematics in schools: the content of the Mathematics curriculum, didactics and research in Mathematics education. However, this approach mostly relies on didactics and curriculum materials in order to integrate ethnomathematics into the teaching of mathematical ideas.

The premise of the ethnomathematics approach is that a learner will comprehend mathematical topics more fully if classroom Mathematics is linked to students' experiences with mathematics outside of the classroom. According to Chahine (2013), the notion that Mathematics can be taught well without considering the cultures of the students has been thoroughly debunked.

When Powel and Temple (2001) examined the "oware" game played by Akan-speaking people in Ghana, they used the cultural games as a technique to incorporate cultural activities in the mathematics classroom. They argued that pupils may learn mathematical ideas like arrangement, probability and chances by playing games. Fouze and Amit (2017) also looked at the games played by the Israeli Negev Bedouin group and emphasized how the games contain mathematical concepts and aid children in developing their mathematical thinking. To incorporate ethnomathematics into the teaching of Mathematics, the Jaman South students in Ghana play a variety of activities that can be utilized to teach mathematical ideas.

Based on the methods for doing so that were discussed above, the teacher of Mathematics and the subject matter of the curriculum serve as the two agents for this integration. Some people believe that the teacher of Mathematics is the only one who can bring ethnomathematics into the classroom, while others believe that both the teacher and the subject matter are crucial. For instance, when conducting their research to ascertain how some mathematical concepts in the daily lives of the people of Zimbabwe can be useful in the Mathematics classroom, researchers (Mtetwa & Jaji, 2006; Nyaumwe, 2006) centered on the teacher as the only way by which those

mathematical concepts could be made available to the learner. In contrast, Madusise (2014) notes that when she examines a cultural village as a context for mediating culture and Mathematics education in the South African curriculum, there is a lack of content and specific methods that enable the pedagogy to link Mathematics and culture.

In Ghana, there are both public and private schools. According to Madusise's (2014) study on using the cultural village as a context mediating in the topic, both teachers and students were familiar with the activities found in the cultural village, which benefited in the integration of ethnomathematics in the teaching of Mathematics in South Africa. As a result, incorporating ethnomathematics might be simpler when students come from similar cultural backgrounds as opposed to different ones. This is owing to the fact that the teacher must adjust to each culture when there are multiple present, which may not produce the desired outcomes.

When incorporating ethnomathematics into the teaching of Mathematics, the approaches, the setting, and the material employed should all be appropriate for the learner's culture. According to Matthew et al. (2013), cultural knowledge is a deliberate primary source of unofficial knowledge that may be used to build learners' mathematical conceptions in a culturally relevant education. This experience should help Mathematics develop as a tool to look critically about society, its structure, and its knowledge.

This suggests that incorporating ethnomathematics into the teaching of Mathematics should go beyond simply exploiting the learner's environment; it should also inspire the learner to analyze their environment and consider how things may be done more successfully. The learners' surroundings ultimately contribute to the mathematical issues. After the curriculum content has been altered to reflect the learners' cultural mathematics experiences, the application of ethnomathematics is complete when the pedagogy additionally considers the learners' extracurricular mathematical activities. According to D'Ambrosio (1990), the purpose of ethnomathematics in school Mathematics is to connect the students' many, deeply entrenched cultural modes of knowing and learning.

The argument made by (Fasheh, 1980) is supported by Gerdes (1996), who claims that one of the cornerstones of effective teaching emphasizes the significance of comprehending students' cultural backgrounds and connecting them to the teaching and learning process. Instead, teachers should look for opportunities to design courses using cultural elements that are easily accessible in the students' immediate surroundings in order to adequately challenge students' views of Mathematics. This is only achievable if teachers of Mathematics in the classroom are given wise counsel on how to develop more in-depth arithmetic curriculum using everyday objects.

Researchers investigated the relationships between video games from popular culture and the teaching and learning of Mathematics (Mogege, 1999). Since he planned to use these games in Mathematics classrooms, his research focused on a variety of traditional and cultural games that may be found in many different cultural contexts. In order to conduct research on how mathematical knowledge was organized and developed within cultural and traditional games, Mogege participated in the regular student activities in the Mathematics classroom. The study's conclusions imply that it would be advantageous to include mathematical ideas from well-known games into arithmetic training and skill development.

3.0 METHODOLOGY

3.1 Population, Sample and Data Collection

The population for this study consists of 1,150 public senior high school students and 63 teachers from the same school. The study focused on one public senior high school in the Jaman South Municipality. The school specifically addressed by this study was Our Lady of Providence Girls' Senior High School, necessitating the employment of a Purposive Sample Approach in selecting all the ten mathematics teachers in the school. Also Simple Random Sampling was used in selecting 2B, 2A3 and 2Science out of the ten classes in form two. 121 people were selected as the participants for this study. That is 111 female students and 10 teachers of Mathematics from Our Lady of Providence Girls' Senior High School.

3.2 Research Instruments

Three distinct instruments were used to gather information for this study: questionnaires for the teachers and students, interviews for the teachers and observations on the part of teachers and students.

4.0 RESULTS

The data collected during the study were analysed in terms of descriptive statistics. The results were presented in Tables for easy presentation of data. The results were presented based on the research questions, which are;

1. What is the level of ethnomathematics content knowledge of teachers of Mathematics in Jaman South Municipality?
2. How can Jaman South teachers of Mathematics integrate ethnomathematics in their lesson?
3. How can the teaching and learning processes at the senior high school level be connected to the Mathematics embedded in the Jaman South cultural activities?

Also, Brown (2010) developed a scale of interpretation for a five-point Likert scale questionnaire. The scale of interpretation is presented in Table 1

Table 1: Adapted Scale of Interpretation for a five-Point Likert-type Scale Questionnaire

Point	Scale Range	Level of Agreement	Interpretation
5	4.10 – 5.00	Strongly Agree	Highest
4	3.10 – 4.00	Agree	High
3	2.10 – 3.00	Neutral	Moderate
2	1.10 – 2.00	Disagree	Low
1	0.10 – 1.00	Strongly Disagree	Lowest

Source (Brown et al., 2010)

Therefore, using Brown's scale of interpretation, the items were ranked in their level of usage based on their mean scores, as presented in Table 1

Table 2: Descriptive Statistics of Students' Perspectives of "Ethnomathematics Content Knowledge questionnaire"

Item No.	Statement	N	Mean	Std. Dev.	Mean Rank	Interpretation
1	I notice drawings wherever I look, including buildings	111	3.7297	.96244	3	High
2	I recognize the mathematical symbols that are used and I can make out triangles in some of the cultural illustrations	111	3.7387	1.05064	2	High
3	I see drawings of cultures appear in geometry classes	111	3.8378	.83710	1	High
4	I am curious to learn more about specific cultural mathematical practices	111	2.8829	1.25581	8	Moderate
5	I see polygons in some cultural artifacts like clothing	111	3.4955	1.03462	6	High
6	I see traditional items used for measuring food stuffs	111	3.7207	.99244	4	High
7	I see some plane figures on leaves	111	2.9099	1.25444	7	Moderate
8	I recognize some patterns in traditional dancing	111	3.6847	.93402	5	High
9	Counting is used during some traditional singing	111	3.2432	1.18488	9	High
Overall Mean Score		111	3.53	0.47		High

From Table, 2, it can be seen that students reported usage of Ethnomathematics Content Knowledge in their learning was high according to Brown's interpretation, with an overall mean score of 3.53(SD=0.47). Specifically, items 1, 2, 3,4,5,6, and 9 were reported to be highly used Ethnomathematics Content Knowledge in students' learning of Mathematics, with mean scores of 3.7297 (SD=0.96), 3.74 (SD=1.05), 3.84 (SD=0.84), 3.50 (SD=1.03), 3.72 (SD=0.99), 3.68 (SD=0.93), 3.24 (SD=1.18) respectively. However, items 4 and 7 were reported by students to be moderately used Ethnomathematics Content Knowledge in their

learning of Mathematics, with mean scores of 2.8829 (SD=1.25581), 2.9099 (SD=1.25444). Overall, the highest ranked Ethnomathematics Content Knowledge reported to be used by students in learning Mathematics is item 3, while the least ranked item reported to be used by students is item 9.

Table 3: Descriptive Statistics of Teachers' Perspectives of "Ethnomathematics Content Knowledge questionnaire"

No	Statement	N	Mean	Standard Deviation	Mean Rank	Interpretation
1	I notice drawings wherever I look, including buildings	10	4.20	.632	3	Highest
2	I recognize the mathematical symbols that are used and I can make out triangles in some of the cultural illustrations	10	3.60	1.075	8	High
3	I see drawings of cultures appear in geometry classes	10	4.31	.823	1	Highest
4	I am curious to learn more about specific cultural mathematical practices	10	3.50	1.080	9	High
5	I was aware of the term Ethnomathematics prior to taking this survey	10	4.30	.483	2	Highest
6	I have received formal training in the field during my teaching career	10	3.90	.876	6	High
7	I have a solid foundation in the fundamental arts for learning mathematics	10	2.90	1.101	10	Moderate
8	I can see how culture is ingrained in mathematics curriculum	10	3.70	.483	7	High
9	I see polygons in some cultural artifacts like clothing	10	4.00	1.054	5	High
10	Counting is used during some traditional singing	10	4.10	.738	4	Highest
Overall mean score			3.85	0.44		High

From Table, 3, it can be seen that teachers reported usage of Ethnomathematics Content Knowledge in their teaching was high according to Brown's interpretation, with an overall mean score of 3.85(SD=0.44). Specifically, items 1,3,5, and 10 were reported to be the highest Ethnomathematics Content Knowledge that can be used by teachers in teaching Mathematics, with mean scores of 4.20(SD=0.63), 4.31(SD=0.82), 4.30(SD=0.48), 4.10(0.74) respectively. Also, items 2,4,6,8, and 9 were reported by teachers to be Ethnomathematics Content Knowledge that can be used by teachers to teach Mathematics, with mean scores of 4.20(SD=0.63), 4.31(0.82), 4.30(SD=0.48), 4.10(0.74) respectively. However, item 7 was

reported by teachers to be moderately used Ethnomathematics Content Knowledge that can be used by teachers in their teaching of Mathematics, with mean scores of 2.90(SD=1.101). Overall, the highest ranked Ethnomathematics Content Knowledge reported to be used by teachers is item 1, while the least ranked item reported to be used by students is item 7.

Table 4: Descriptive Statistics of Students' Perspectives of "integration of ethnomathematics questionnaire"

No	Statement	N	Mean	Std. Dev.	Mean Rank	Interpretation
1	I am familiar with the cultural mathematical practices of the Jaman South people.	111	3.5225	1.02555	7	High
2	My teacher incorporates the cultural mathematical practices of the Jaman South people into the curriculum.	111	3.1171	1.06804	10	High
3	I give instances of particular cultural mathematical practices from the Jaman South that can be included into senior high school mathematics instruction.	111	3.7658	1.01762	2	High
4	My teacher creates a culturally responsive classroom environment that values and incorporates the mathematical practices of the Jaman South people.	111	3.3333	1.03865	9	High
5	My teacher employs strategies to help students understand and appreciate the cultural mathematical practices of the Jaman South people.	111	3.9279	.93139	1	High
6	My teacher effectively communicates the relevance and significance of Jaman South cultural mathematical practices to students.	111	3.7207	1.00155	4	High
7	I use resources, materials, or technology to support the integration of Jaman South cultural mathematical practices into the classroom	111	3.7477	1.02219	3	High

8	My teacher collaborates with the local Jaman South community and cultural experts to enhance the integration of their mathematical practices into the senior high school mathematics curriculum	111	3.4595	1.05127	8	High
9	My teacher ensures that the inclusion of Jaman South cultural mathematical practices aligns with the broader goals and objectives of the senior high school mathematics curriculum	111	3.6757	.90616	5	High
10	My teacher provides examples of successful implementations of incorporating cultural mathematical practices from other communities, and how these experiences can inform the inclusion of Jaman South practices.	111	3.6306	1.01738	6	High
Overall Mean Score		111	3.5919	0.58700		High

As presented in Table 4, SHS students reported that teachers' inclusion of cultural mathematical practices in the Jaman South Municipality in the teaching and learning of Mathematics was high according to Brown's (2010) interpretation (see Table 1), with an overall mean score of 3.59(SD=0.59). Specifically, all the items were reported by students to be highly included in Mathematics teaching and learning. Overall, the highest ranked cultural practice reported by students to be used to be included in the teaching and learning of Mathematics is item 5, while the least ranked item reported to be used by students is item 2.

Table 5: Descriptive Statistics of Teachers' Perspectives of "Integration of ethnomathematics questionnaire"

No	Statement	N	MEAN	STD. DEV.	Mean Rank	Interpretation
1	I am familiar with the cultural mathematical practices of the Jaman South people.	10	3.72	.949	7	High
2	I incorporate the cultural mathematical practices of the Jaman South people into the curriculum.	10	4.10	.876	1	Highest
3	I give instances of particular cultural mathematical practices from the	10	3.81	.919	5	High

	Jaman South that can be included into senior high school mathematics instruction.					
4	I create a culturally responsive classroom environment that values and incorporates the mathematical practices of the Jaman South people.	10	3.80	1.229	6	High
5	I employ strategies to help students understand and appreciate the cultural mathematical practices of the Jaman South people.	10	4.01	.816	2	Highest
6	I effectively communicate the relevance and significance of Jaman South cultural mathematical practices to students.	10	3.70	1.059	9	High
7	I use resources, materials, or technology to support the integration of Jaman South cultural mathematical practices into the classroom	10	4.00	1.054	3	High
8	I collaborate with the local Jaman South community and cultural experts to enhance the integration of their mathematical practices into the senior high school mathematics curriculum	10	3.40	1.174	10	High
9	I ensure that the inclusion of Jaman South cultural mathematical practices aligns with the broader goals and objectives of the senior high school mathematics curriculum	10	3.71	.949	8	High
10	I provide examples of successful implementations of incorporating cultural mathematical practices from other communities, and how these experiences can inform the inclusion of Jaman South practices.	10	3.90	.876	4	High
Overall Mean		10	3.8100	0.7922	5	High

The items were ranked in terms of their level of inclusion using Brown's (2010) scale of interpretation (see Table 1), as indicated in Table 5. According to Brown's interpretation, Table 5 shows that instructors reported that Ethnomathematics integration in the teaching and learning process of Mathematics was high, with an overall mean score of 3.81(SD=0.79). Specifically, items 2 and 5 were reported to be the highest cultural practices that are included by teachers in teaching Mathematics, with mean scores of 4.10(SD=0.88), 4.01(SD=0.82) respectively. Also, items 1, 3, 4, 6, 7, 8, 9, and 10 were reported by teachers to be highly used ethnomathematics integration in the teaching and learning processes with mean scores of 3.72(0.94), 3.81(0.92), 3.80(1.23), 3.70(1.06), 4.00(SD=1.054), 3.40(SD=1.17), 3.71(0.95),

and 3.90(SD=0.88) respectively. Overall, the highest ranked ethnomathematics integration reported to be used by teachers is item 2, while the least ranked item reported to be used by students is item 8.

Table 6: Descriptive Statistics of Students' Perspectives of "Connecting Mathematics to Embedded Cultural Activities Questionnaire"

No	Statement	N	MEAN	STD. DEV.	Mean Rank	Interpretation
1	My teacher gives some examples of Jaman South cultural activities that involve mathematics	111	3.7838	.96677	2	High
2	My teacher bridges the gap between Jaman South cultural activities and the Mathematics curriculum at the senior high school level	111	3.2523	1.00425	10	High
3	My teacher incorporates Jaman South cultural activities into Mathematics lessons to make them more engaging and relevant to students	111	3.6486	1.06727	5	High
4	I connect the mathematical concepts taught in the senior high school curriculum to the real-life applications found in Jaman South cultural activities	111	3.7117	.96660	3	High
5	I provide specific examples of how Jaman South cultural activities can be used to illustrate mathematical concepts or problem-solving techniques	111	3.5225	.98023	9	High
6	My teacher encourages students to explore and analyse the mathematics inherent in Jaman South cultural activities on their own	111	3.5766	1.02292	8	High
7	I use resources or materials to support the integration of Jaman South cultural activities into Mathematics lessons at the senior high school level	111	3.7027	1.00539	4	High
8	My teacher assesses students' understanding of the Mathematics embedded in Jaman South cultural activities	111	3.6216	.92495	6	High

9	My teacher shares any success stories or examples of schools or teachers effectively connecting Mathematics lessons to Jaman South cultural activities	111	3.9009	.91408	1	High
10	My teacher includes Jaman South cultural activities in Mathematics classrooms to promote cultural appreciation and respect among students	111	3.6126	.97394	7	High
Overall Mean Score		111	3.6333	.58626		High

According to Brown's (2010) interpretation (see Table 1), SHS students reported that teachers' connections between Mathematics and embedded cultural activities in the Jaman South Municipality were high, as shown in Table 6, with an overall mean score of 3.63(SD=0.58). Specifically, all the items were reported by students to be highly rated by students for teachers connecting Mathematics to embedded cultural activities in Mathematics teaching and learning. Item 9 has the highest overall rating from students for the cultural practice used by teachers to link mathematics to embedded cultural activities in mathematics teaching and learning, while item 2 receives the lowest overall rating from students for the cultural practice used by teachers.

Table 7: Descriptive Statistics of Teachers' Perspectives of "Connecting Mathematics to Embedded Cultural Activities Questionnaire"

N o	Statement	N	Mean	Std. Dev.	Mea n Ran k	Interpretatio n
1	I can give some examples of Jaman South cultural activities that involve mathematics	10	3.50	.972	10	High
2	I bridge the gap between Jaman South cultural activities and the Mathematics curriculum at the senior high school level	10	3.51	1.080	9	High
3	I incorporate Jaman South cultural activities into Mathematics lessons to make them more engaging and relevant to students	10	3.80	.789	5	High
4	I connect the mathematical concepts taught in the senior high school curriculum to the real-life applications found in Jaman South cultural activities	10	4.60	.516	1	Highest

5	I provide specific examples of how Jaman South cultural activities can be used to illustrate mathematical concepts or problem-solving techniques	10	3.91	.876	4	High
6	I encourage students to explore and analyse the Mathematics inherent in Jaman South cultural activities on their own	10	4.40	.516	2	Highest
7	I use resources or materials to support the integration of Jaman South cultural activities into Mathematics lessons at the senior high school level	10	3.90	.994	3	High
8	I assess students' understanding of the Mathematics embedded in Jaman South cultural activities	10	3.70	1.160	6	High
9	I share any success stories or examples of schools or teachers effectively connecting Mathematics lessons to Jaman South cultural activities	10	3.52	1.080	8	High
10	I include Jaman South cultural activities in Mathematics classrooms to promote cultural appreciation and respect among students	10	3.60	.966	7	High
Overall Mean Score		10	3.840	0.68346		High
			0			

According to SHS teachers and shown in Table 7, Brown's (2010) interpretation of the teaching and learning of mathematics indicated that teachers' connections to embedded cultural activities in the Jaman South Municipality was high, with an overall mean score of 3.84 (SD=0.68). With mean scores of 4.60 (SD=0.52) and 4.40 (SD=0.52), respectively, it was determined that items 4 and 6 were the most effective at tying Mathematics to embedded cultural activities in the Jaman South Municipality. Also, items 1, 2, 3, 5, 7, 8, 9, and 10 were reported by teachers to be highly used cultural mathematical practices in the teaching and learning processes with mean scores of 3.50(0.93), 3.51(1.08), 3.80(SD=0.79), 3.91(SD=0.88) 3.90(SD=0.99), 3.70(SD=1.16), 3.52(SD=1.080), 3.60(SD=0.966) respectively.

Overall, item 4 receives teachers' highest ratings for its ability to link mathematics instruction to locally rooted cultural activities in the Jaman South Municipality, while item 1 receives their lowest ratings.

5.0 DISCUSSION OF FINDINGS

5.1 Ethnomathematics Content Knowledge

This research question sought to determine the Ethnomathematics Content Knowledge of mathematics teachers in Jaman South Municipality. The perspectives of students and teachers were considered in answering this research question. Using Brown's scale of interpreting Likert scale questionnaire, descriptive statistics of students reported usage of Ethnomathematics Content Knowledge in their learning was high according to Brown's (2010) interpretation, with an overall mean score of 3.53(SD=0.47). Specifically, it was reported by students that the teachers apply Ethnomathematics Content Knowledge and make connections with cultural practices in teaching and learning Mathematics. Also, students reported that teachers use Ethnomathematics Content Knowledge to make connections with cultural practices, demonstrate Ethnomathematics Content Knowledge to make connections with cultural practices, creates a culturally inclusive classroom environment that supports the incorporation of cultural mathematical practices, integrates cultural mathematical practices into lesson planning and instructional strategies, and include and value all students when exploring the cultural relevance of mathematics. However, students reported that they face challenges including cultural mathematical practices in learning Mathematics.

Similar to students, teachers in the Jaman South community reported that usage of Ethnomathematics Content Knowledge in their teaching was high according to Brown's interpretation, with an overall mean score of 3.85(SD=0.44). Teachers therefore expressed that the Ethnomathematics Content Knowledge they apply in the teaching and learning of Mathematics includes; probability and traditional games.

5.2 Integration of Ethnomathematics

The purpose of this research topic was to ascertain how teachers incorporate ethnomathematics into their lessons. According to Brown's (2010) interpretation, descriptive statistics from the students' point of view revealed that teachers in the Jaman South Municipality had a high level of integration of ethnomathematics in the teaching and learning of mathematics, with an overall mean score of 3.59 (SD=0.59). Therefore, according to what students reported, teachers primarily use techniques to foster an understanding of and appreciation for the traditional mathematical traditions of the Jaman South people.

Similarly, from teachers' perspective, teachers reported inclusion ethnomathematics Integration practices in the teaching and learning process of Mathematics was high according to Brown's interpretation, with an overall mean score of 3.81(SD=0.79). In order to incorporate cultural mathematical practices into the teaching and learning of mathematics, teachers have stated in a semi-structured interview that they specifically take into account using traditional games and puzzles, inviting guest speakers or cultural specialists, showing students how mathematical concepts are applied in the real world through real-world examples, and using traditional symbols and artifacts. This conclusion aligns with that made by Mogege (1999).

5.3 The Connection of Teaching and Learning Processes

The purpose of this study topic was to ascertain the connections between senior high school mathematics instruction and the mathematics present in Jaman South cultural activities. According to Brown's (2010) assessment, teachers' connections to embedded cultural activities in the Jaman South Municipality during the teaching and learning of mathematics were strong,

as evidenced by descriptive statistics, which showed that teachers' overall mean scores were 3.63 (SD=0.58). Students concluded that sharing success stories or examples of schools or teachers successfully tying Mathematics lessons to Jaman South cultural activities is the best way to link the teaching and learning of mathematics in the classroom to the mathematics embedded in those activities.

According to Brown's (2010) interpretation, teachers' connections between mathematics teaching and learning and embedded cultural activities in the Jaman South Municipality were determined to be strong, with an overall mean score of 3.84 (SD=0.68). Teachers claimed that some of the methods they employ to do this include assigning projects in cultural mathematics, setting aside specific days or events for it, and incorporating cultural context into mathematical difficulties. Additionally, this conclusion is in line with those of D'Ambrosio (1985) and Gerdes (1996).

6.0 CONCLUSION

The present study explored the Mathematics embedded in the cultural activities of senior high schools in the Jaman South Municipality.

The Jaman South population performed mathematical operations like weighting, measuring, and counting. In ways that are vastly different from what is often taught in schools. The majority of respondents attested to the inclusion of mathematical cultural practices and activities of the Jaman South people in classroom teaching and learning.

They explained that this would improve communication between the school and the students' cultures and would also help the students do better in Mathematics classes. The respondents identified a variety of traditional items and activities, including as games, farming, trading, etc. as components of the Jaman South traditional activities, in order to ensure that students understand school arithmetic.

The teachers of Mathematics were upbeat about the relationship between Mathematics and culture and argued that a culturally sensitive curriculum could improve students' self-esteem and Mathematics performance. The students were more enthusiastic about ethnomathematics and insisted that it be taught in the classroom. Therefore, the Jaman South traditional activities and practices may improve the students' performance in the school's teaching and learning processes as well as their comprehension of mathematics.

6.1 Recommendations

1. Teachers ought to use real-world scenarios to illustrate their points. As a result of this, learners' pre-conceptions regarding Mathematics as an abstract topic will be changed.
2. Teachers and other stakeholders need to make sure that Mathematics is not taught in a detached manner that ignores the realities of everyday life.

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