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Exploring Various Cooperative Learning Strategies Used by Teachers in Indigenous School: Basis for a Learning Guide

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ABSTRACT

This study explored the various cooperative learning strategies used by the teachers in indigenous schools. Mixed method of quantitative and qualitative designs was used. The quantitative method used a quasi-experimental approach. There were 12 female teachers and 100 pupils who took part in this study. It specifically looked into the performance of the learners, before and after the use of the various cooperative learning strategies, the extent of use of cooperative learning strategies and the concerns of the teachers on the use of cooperative learning strategies. It was found that there was a significant difference between the pre-test and post-test of the learners. This study proves that cooperative learning methods are used by the teachers in indigenous schools in teaching. However, the teachers' concerns were discovered such unequal participation, shyness of pupils and the need to be sensitive to different cultures continue. A learning guide should focus on strategies that are useful and appropriate for different cultures so that teachers can deal with these problems and make learning better.

Keywords: Exploring, Learning Strategies, Indigenous

INTRODUCTION

Background of the study

In the field of education, cooperative learning strategies are a frequently discussed topic, particularly in indigenous schools. This school serves a diverse learner population, predominantly from the Balangao, Ga'dang, and Bago tribes, where both learners and teachers are rooted in indigenous cultures. Indigenous schools serve learners from indigenous communities, which are groups of people with their own unique cultures, languages, and traditions that are connected to specific places. Cooperative Learning Strategies involve two or more learners working together to achieve a shared objective, making it especially relevant in such culturally rich settings. Implemented across various grade levels and subjects, cooperative learning strategies have been proven to enhance academic achievement. Often referred to as small-group learning, this approach encourages learners to collaborate in small teams toward a common goal. The tasks can range from complex projects, such as designing a new type of school, to simpler activities like collaborating to solve multi-step math problems. In some instances, group members may work together without defined roles, while in others, each member is individually responsible for a specific part of the task (Tran, 2019). This cooperative approach aligns well with the communal values of the indigenous tribes, fostering an inclusive learning environment that supports both academic success and cultural connection.

Mundelsee & Jurkowski (2021) opine that cooperative learning, is a widely used strategy in the literature and has proven to improve learner performance. It allows learners to think for themselves, talk to their seatmates to exchange ideas, and show their willingness to participate or share their thinking in class discussions. Learners are happy to participate in cooperative teaching and learning.In another study, Appiah-Twumasi, Antwi, Anderson, & Sakyi-Hagan, (2020) concluded that learners' performance is enhanced when they work together cooperatively than when they work individually.

It can be inferred that group work leads to collaboration, confidence, and motivation, which are associated with performance and participation. The learners believed they were more comfortable participating in class discussion because they experienced different answers from their peers, which motivated them to share their views with class, creating an atmosphere of successful learning. Siller, & Ahmad (2024) highlighted that collaborative learning appears promising for enhancing mathematics achievement and nurturing positive attitudes in elementary learners. The teacher's role of providing constant guidance to learners and allowing them to engage in peer dialogues encourages student-centered learning, which is vital for successful learning (Tesema et al., 2020).

The findings of numerous studies highlight that cooperative learning can be beneficial for pupils of all ages and levels of ability, backgrounds, and races. It encourages pupil to take greater responsibility for their own learning and the learning of others. In this learning approach, pupils are encouraged to become less reliant in their own ability to think and seek information and assistance from other sources. It also provides learners with a relative safe and non-threatening environment in which to test their and receive feedback. Cooperative learning provides reciprocity between and among

group members and establishes a learn- teach relationship. This set-up gives satisfaction for what one does to improve another while gaining some favors well. It encourages interdependence among the pupils as they increase in skills.

Under the new curriculum structure of the Department of Education, there are seven core learning areas: English, Filipino, Science, Mathematics, Edukasyon sa Pagpapahalaga, Edukasyon Pantahanan at Pangkabuhayan, and Araling Panlipunan. The first four subjects—English, Filipino, Science, and Mathematics—serve as foundational tools essential for developing students' learning skills. These subjects are designed to meet the individual competency needs of learners, providing them with fundamental knowledge and skills necessary for their overall educational development.

The selected school for this study is considered an indigenous school since 99% of the pupils belong to indigenous groups such as Balangao, Ga'dang and Bago. Likewise, the school head and the teachers belong to these indigenous groups. The researcher chooses them to see if cooperative learning strategies are effective to them as they work together in their activities knowing that they have commonalities such as language or dialect, cultural values and practices.

In exploring various cooperative learning strategies used by teachers in teaching in indigenous schools, this study identifies several gaps in earlier research. Previous studies often lack a focus on diverse educational settings, such as urban versus rural schools, and do not sufficiently analyze the impact on students with varying achievement levels. Additionally, there is limited integration of modern technological tools and a scarcity of longitudinal data to assess sustained impacts. Furthermore, many earlier studies overlook the importance of comprehensive teacher training programs and their influence on the successful implementation of cooperative learning strategies. This study aims to address these gaps by incorporating these elements to provide a more holistic understanding of cooperative learning's effectiveness in indigenous school settings.

Research Questions

1. What is the profile of the teachers as to age, highest educational attainment, and grade level taught?
2. What is the performance of pupils before and after the implementation of Cooperative learning strategies?
3. Is there a significance difference in the performance of the pupils before and after the implementation of cooperative learning strategies?
4. What is the extent of use of the cooperative learning strategies by the teachers?
5. Is there a significant difference in the extent of use of cooperative learning strategies as to the profile of the teachers?
6. What are the concerns of the teachers on the use of cooperative learning strategies?

METHODS

Research Design

The study employed a mixed-method approach, utilizing quantitative and qualitative designs. For the quantitative design, quasi-experimental design was used, . The descriptive method was used to determine the profile of respondents, the extent of the use of cooperative learning strategies, and the issues and concerns encountered by teachers in teaching using cooperative learning.

Through this method, the data were described, analyzed, and interpreted. Meanwhile, the quasi-experimental design allowed for the measurement of the impact of cooperative learning strategies on pupils' academic performance by comparing pre-test and post-test results. The qualitative design was used to identify the concerns of the teachers on the use of cooperative learning strategies.

Participants of the Study

The respondents of this study included 12 female teachers and 100 pupils from Grades 1 to 6, from both San Emilio Elementary School-Main and San Emilio Extension, located in the Paracelis North District.

Instrumentation

The **questionnaire** was used as the basic tool for gathering the necessary data for this study.

Part 1 was used to gather the profile of the respondents in terms of age, Highest educational attainment, and grade level taught.

Part II dealt with the academic performance of pupils before and after the implementation of cooperative learning strategies.

Part III was used to determine the extent of use of cooperative learning strategy.

An Interview Guide was used to gather the concerns of the teachers on the use of cooperative learning strategies.

Data Gathering Procedure

The researcher sought permission from the Schools District Supervisor to conduct the study. Upon approval, a courtesy call was made to the school principal to facilitate the administration of the questionnaires to the concerned teachers. The researcher oriented the teacher-respondents about the purpose of the data gathering. With the assistance of the teacher-respondents, the questionnaires were retrieved promptly. The collected questionnaires were then organized and tallied according to the instructions provided by the statistician for statistical analysis.

For the concerns of the teachers one-on-one interview was conducted. For similar responses, the teacher requested for focus group discussion to confirm the paraphrased statements.

Data Analysis

For the quantitative data, frequency count and percentage were used. To compare the pre-test and post-test results, the t-test was employed.

To quantify the relationships of the responses along the identified variables, the following four-point Likert scale was used:

Arbitrary Value	Limit	Description
4	3.25-4.00	Always
3	2.51-3.24	Often
2	1.76-2.50	Sometimes
1	1.00-1.75	Never

The concerns of teachers in implementing cooperative learning strategies were thematized. The responses were grouped to determine the themes,

RESULTS

Profile of Respondents

Table 1. Profile of the Teacher Respondents

Profile	Frequency	Percentage
Age		
20- 30	3	25
31- 40	7	58.00
41- 50	2	17.00
Highest Educational Attainment		
College Graduate	1	8.00
Master's Degree	10	83.00
Doctoral Degree	1	8.00
Grade Level Taught		
Primary Grades	7	58.00
Intermediate Grades	5	42.00

Majority of respondents are within the age bracket of 31-40 years old indicating that they are likely in a stage of their career where they possess considerable teaching experience. In terms of educational attainment, most of the respondents hold a master's degree, which highlights a strong commitment to professional development and advanced expertise in education. When it comes to grade level taught, the teachers are fairly evenly split between primary and intermediate grades. This distribution indicates a balanced representation of experience and skills across the early stages of education, ensuring that students in both primary and intermediate grades are supported by teachers with diverse expertise and educational backgrounds.

Performance of the Pupils before and after the use of cooperative learning strategies

Table 2. Performance of pupils before and after the implementation of Cooperative learning strategies

Score range	Pre-test	Percentage	Post test	Percentage
16 - 20 (Very Good)	24	24	60	60
11 - 15 (Good)	20	20	25	25
6 - 10 (Fair)	30	30	10	10
0 - 5(Needs Improvement)	26	26	5	5
Mean	9.1	Fair	13.9	Good

The result of the pre-test shows that the pupils performed fairly which indicates that the learners performed poorly in the different subjects. After the introduction of cooperative learning strategies, there was a significant increase in the performance of the pupils where they obtained a sore of 13.9 or good rating. This implies the positive impact of cooperative learning on pupils' performance and engagement. Overall, these results suggest that cooperative learning strategies contributed to a substantial improvement in pupil performance across various score ranges.

Significant Difference in the performance of the pupils before and after the implementation of cooperative learning strategies

Table 3. Significant Difference in the performance of the pupils before and after

the implementation of cooperative learning strategies

Test	Mean Score	p-value	Interpretation
Pre-test	10.10	0.00	Significant
Post- test	15		

It was found that there was a significant difference between the pre-test and post-test score of the pupils. This shows that the indigenous children can learn better with cooperative learning strategies employed by their teachers in the different subjects.

Use of the cooperative learning strategies by the teachers

Table 4. Extent of use of the cooperative learning strategies by the teachers

Strategy	**Mean**	**Description**
Cultural Role-Playing	2.92	Often
Small Group Discussion	3.17	Always
Jigsaw Strategy	2.08	Often
Peer Tutoring	2.58	Often
Reciprocal Teaching	2.25	Often
Teamwork Grouping	2.83	Often
Think-Pair-Share	2.92	Often
Three-Minute Review	2.17	Often
Three-Step Interview	1.92	Sometimes
Average Weighted Mean	2.54	Often

The cooperative learning strategies were often used by the teachers. Small group discussion was claimed by the respondents as always used. Next in rank are cultural role-playing and think-pair-share were perceived as often used. The other strategies like peer tutoring and teamwork grouping were also assessed as often used, suggesting that teachers recognize their value in facilitating cooperative learning environments. However, strategies like the three-step interview obtained the lowest mean but still fall within the category of sometimes used.

Significant difference in the extent of use of cooperative learning strategies as to the profile of the teachers

Table 5. Significant difference in the extent of use of cooperative learning strategies as to the profile of the teachers?

Profile	p-value	Interpretation
Age	0.69	Not Significant
Highest Educational Attainment	0.40	Not Significant
Grade Level Taught	0.31	Not Significant

No significant difference was discovered on the extent of use of cooperative learning strategies as to age, highest educational attainment and grade level taught. This implies that the teachers did not vary in their use of cooperative learning strategies when grouped as to their profile.

Concerns of the Teachers on the Use of Cooperative Learning Strategies

Theme 01. Lack of Participation

Learners were found by the researcher to lack participation in the use of cooperative learning strategies as stated by the following:

T 1. Nakitak nga iti small group discussion, dua wenno tallo laeng nga pupils ti talaga nga mangipapati nga mangaramid iti activities. (*I observed in small group discussion that only two or three learners usually take responsibility for doing the activities)*

T 3. Adda dagiti dadduma nga grupo nga makalpas nga dagus, samantalang ti dadduma nga grupo mabayag nga malpas ta adda dagiti haan nga tumulong kadagiti kakadua da nga agaramid kadagiti activities da. *(Some groups finish quickly, while others take a long time to complete their tasks because there are learners who do not help their companions in the activities.)*

T 4. Hindi lahat ng estudyante ay aktibong nakikilahok sa kanilang mga grupo.(N*ot all students actively participate in their groups.)*

T 5. Adda dagiti pupils nga saanda makitinnulong kadagiti kaklase da,

gapu ta namnamaen da nga adda mangaramid kadagiti activities da.(*Some learners don't participate in helping their classmates because they expect others in the group to do the activities for them.)*

Theme 02. Lack of communication skills

Inability of learners to express their ideas hinder their learning progress. This was expressed by the following respondents:

T 02. Marigatan dagiti estudyante nga mangibingay ti nasursuro da kadagiti grupo da gapu ta saan da maiyebkas ti kapanunutan da. *(Learners sometimes struggle to communicate what they have learned with their group.)*

T 05. May mga mag-aaral na nahihirapan sa pagsagot sa mga tanong, na nagiging sanhi ng kanilang hindi maayos na pagpapahayag ng kanilang iniisip. (*There learners who cannot answer the questions, as an effect of their inability to express their thoughts clearly.)*

T 07. Nahihirapan sa pagsagot sa mga tanong ang ilang bata dahil hindi maayos na pagpapahayag ng kanilang iniisip. (S*ome learners cannot answer the questions due to their inability to express their thoughts clearly.)*

T 08. Adda ubbing saan nga agsaludsod ken sumungbat, gapu ta saan da a maawatan unay ti lesson da. *(There are learners who cannot answer questions because they do not fully understand their lesson.)*

Theme 03. Lack of patience in helping others

One of the issues on the use of cooperative learning strategies is lack of patience in helping other learners. This is in the case of fast learners.

T03. May mga mag-aaral na nawawalan ng pasensya ang ibang estudyante kaya nahihiya ang mga nangangailangan ng tulong. (S*ometimes, the lack of patience among some learners makes the slow learners feel hesitant to ask questions.)*

T.6. May kakulangan ng pasensya ang ibang bata kaya hindi aktibong makilahok naman ang iba.*(There is lack of patience among some learners make those who need help hesitant to ask questions.)*

T 10. Fast learners are too in a hurry to do things that they cannot wait for the others.

Theme 04. Lack of cooperation

The respondents observed that inspite of using cooperative learning strategies, there is lack of cooperation among the learners. They gave the following statements:

T 11. Anera estudyante a ammena dumuffun anna awan mekontribute da

si grupo ra eh antu yaw maka a'da si problema. *(Some learners do*

nothingin their group activity, so they cannot contribute to the task.)

T 12. Sa Teamwork Grouping, bawat estudyante ay nagkakaroon ng papel sa kanilang grupo. Natututo silang magtrabaho nang magkakasama, pero minsan nagkakaroon ng alitan kapag hindi pareho ng kontribusyon. (*Teamwork Grouping gives each learner a role in the group, helping them work together, but conflicts arise when contributions aren't equal.)*

T 13. Kapag gumagamit ako ng Teamwork Grouping, mas mabilis natututo ang klase. Pero, may ilan na umaasa lang sa kanilang kaklase, kaya kailangan pa ng masusing gabay. (Using Teamwork Grouping helps the class learn faster, but some learners rely too much on others, so it requires careful monitoring.)

DISCUSSION

The profile of teacher respondents shows a diverse range of ages, educational backgrounds, and teaching levels. Regarding age distribution, the majority of respondents fall within the 31-40 age range, comprising 58.33% of the group, indicating that many teachers are likely in a stage of their career where they possess considerable teaching experience. The 20-30 age group accounts for 25%, suggesting a smaller proportion of early-career educators, while those aged 41-50 make up 16.67%, representing a group of more seasoned teachers who bring extensive experience to their roles. In terms of educational attainment, the data reveals that a significant 83.33% of respondents hold a master's degree, which highlights a strong commitment to professional development and advanced expertise in education. The remaining teachers are split equally between those who are college graduates and those who have

attained a Doctoral Degree, each constituting 8.33%. This spread suggests a workforce that values higher education and ongoing improvement in educational skills. When it comes to grade levels taught, teachers are fairly evenly split between primary and intermediate grades, with 58.34% teaching primary grades and 41.66% teaching intermediate grades. This distribution indicates a balanced representation of experience and skills across the early stages of education, ensuring that students in both primary and intermediate grades are supported by teachers with diverse expertise and educational backgrounds.

The findings highlight the impact of cooperative learning strategies on learner's performance. Initially, 56% of the learners fell into the "fair" and "needs improvement" categories on the pre-test, indicating poor performance in various subjects. However, after the implementation of cooperative learning strategies, 85% of learners improved significantly, performing in the "very good" and "good" ranges, with only 15% remaining in the lower performance bracket. These results suggest that cooperative learning strategies positively influence learners engagement and academic outcomes, demonstrating how effective cooperative learning can be in getting learners involved and helping them understand the lessons better. The success of cooperative learning strategies indicates that working together is a natural fit for these indigenous learners, who value learning in a communal way that includes support from one another.

Further supports the effectiveness of cooperative learning by demonstrating a significant difference between pre-test and post-test scores. This improvement indicates that cooperative learning methods particularly benefit indigenous learners, who appear to learn better in collaborative environments. This result emphasizes the value of inclusive teaching strategies that support diverse learning needs and highlights cooperative learning as a viable approach for enhancing learning outcomes among different learners groups.

It provides insights into the frequency of specific cooperative learning strategies used by teachers. The most frequently used strategy was small group discussions, with cultural role-playing and think-pair-share also ranking highly. Teachers recognize the value of these methods in fostering a cooperative learning environment. Other strategies, such as peer tutoring and teamwork grouping, are also commonly used, while the three-step interview, though rated lowest, is still used by some educators. This pattern reflects teachers' understanding of which strategies are most effective in encouraging student participation and teamwork.

Lastly, it reveals that differences in teachers' profiles—such as age, highest educational attainment, and grade level taught—significantly influence their choice of cooperative learning strategies. This variation suggests that personal and professional factors shape teachers' approach to cooperative methods, potentially reflecting diverse teaching styles, preferences, and experiences that influence how they implement cooperative learning in the classroom.

Teachers' worries about cooperative learning methods highlight the challenges of ensuring learners success. Peer tutoring is a great way for shy youngsters and slow learners to get extra help. However, faster learners may dominate the discussion, making slower learners dependent on them without understanding the issue. Because of this imbalance, educators must monitor student interactions and provide extra help to ensure that both students benefit equally from the arrangement. Cooperative learning encourages students to pair-share and demonstrate. These methods improve math attitudes and motivate children more than standard ways. Cooperative learning aims to teach children literacy and numeracy so they can participate in society. Its overall purpose is to strengthen learners' cognitive skills through a student-centered approach to a wide range of educational outcomes (Trinidad, 2020). Cooperative strategies boost student performance (Wu & Tao, 2022) and encourage teamwork, which enhances school spirit (Reinhard, 2021).

Small group chats are another effective technique to get students to collaborate and share ideas. Because some learners dominate the argument while others are inert, teachers have trouble ensuring that all learners participate equally in groups. This can cause inconsistent learning. The Jigsaw method, in which pupils' study and teach a lesson portion, makes it hard to ensure that all learners understand their section. It could affect the class's understanding. This framework highlights individual accountability and preparation in group work. Jigsaw, another concept, has learners working together in groups with a mentor providing assignments and status. Arifin (2022) examined cooperative learning using STAD as a paradigm and found that most learners liked STAD. Abd Algani (2021) found that cooperative learning improved students' math views. Both studies showed that cooperative learning improves arithmetic achievement. An action research study by Assan-Donkoh et al. (2022) found that cooperative learning practices improved academic performance and learner interest. Sappaile et al. (2023) also found that cooperative learning principles including positive interdependence and individual accountability improved learners performance.

Teachers have found success utilizing Think-Pair-Share to engage reticent learners and the entire classroom. However, some learners may become too dependent on their friends, preventing them from forming autonomous thinking. A teacher commented that cooperation grouping can cause unequal effort distribution. This is because some learners work more and others less.

This could hinder learning goals and collaboration in these activities. Lestari et al. (2019) found that cooperative math learners performed better. Learners who employed cooperative learning performed better than those who used conventional media.

Teachers have unique challenges when using specialized methods like Reciprocal Teaching and Cultural Role Play. Learners may misinterpret cultural roles, which can cause offense. However, cultural role play can entertain and educate learners. Reciprocal Teaching helps pupils develop leadership skills, but not all kids are ready to lead conversations, which can lead to unproductive explanations and group confusion. These considerations show that cooperative learning approaches, while their benefits, require careful monitoring and guidance from teachers to meet students' different needs and capacities. Wang and Fang (2020) stressed the importance of teacher facilitation in creating a positive learning environment. Their study shows how teachers' attitudes and facilitation skills affect cooperative learning students' experiences and outcomes. Effective teacher facilitation is needed to resolve issues and ensure cooperative learning practices succeed. Ahmad and Dogar (2023) and Chiuphae (2023) also address cooperative learning difficulties

by comparing it to traditional teaching approaches. These studies show that cooperative learning has benefits but also obstacles that must be managed. Successful implementation requires teacher concerns about cooperative learning's efficacy and continued professional development.

Proposed Learning Guide for Indigenous Learners

SY 2025-2026

Goal: To help indigenous learners improve their learning and teamwork skills through cooperative learning strategies while valuing their culture.

Objectives	Topics	Cooperative learning strategies	Time Frame	Champions	Expected Output
• Encourage active participation and teamwork learning. • Build confidence, leadership and communication skills	**Mathematics:** a. Topic Traditional Counting, measuring and patterns in indigenous crafts. **MELC Competency:** Solve real-life problems involving measurement and estimation of time, length, mass and capacity using appropriate tools and techniques.	• Think-Pair Share • Small Group	Year-round integration into lessons	Teacher Learners	• Groups present measurement tools used by indigenous communities and compare them to standard measurement system.
• Promote respect for indigenous culture in learning.	**English:** a. Topic Story telling and oral traditions of indigenous communities. **MELC Competency:** Identify and analyze the elements of story.	• Jigsaw • Role playing	Year-round integration into lessons	Teacher Learners	• Learners perform a dramatization of a local folktale.
	SCIENCE: a. Topic Indigenous knowledge on plants, herbal medicine and natural resources. **MELC Competency:** Classify plants based on their uses and characteristics.	• Small group • Think-Pair share	Year-round integration into lessons	Teacher Learners	• The learners will submit a class collection of local medicinal plants and their uses.
	GMRC a. Topic Respect for elders, community cooperation	• Role playing • Think-Pair-Share • Small Group	Year-round integrations into lessons	Teacher Learners	Poster highlighting importance of indigenous values.

	and preserving traditions. **MELC Competency:** Show respect for elders and traditions.				

CONCLUSION

The results show that the cooperative learning strategies are effective in engaging learners in indigenous schools. However, challenges such as unequal participation and the need for cultural sensitivity remain. A learning guide should focus on practical and culturally relevant strategies to help teachers address these issues and improve learning outcomes.

RECOMMENDATION

To make cooperative learning strategies work better in indigenous schools, administrators may give teachers ongoing professional development and tools that are relevant to their culture to help them use these strategies.

Teachers should be told to adapt cooperative learning activities like peer tutoring and small group talks to fit the cultural backgrounds of their students. This way, all learners can be included and actively participate.

More research needs to be done to find the best ways for indigenous learners to learn together, focused on methods that improve both academic performance and cultural understanding.

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