Research Article

Level of Teaching Practices in Mathematics in Relation to Indigenous Students' Academic Performance in Selected Schools in Zambales SY 2019-2020

Annalou B. Panes[1] & Teresita A. Falle[2]

[1]Calapandayan Integrated School, Department of Education, Calapandayan, Subic, Zambales
[2]President Ramon Magsaysay State University

ABSTRACT

The study revealed that the teacher-respondent is in her early adulthood, bachelors' degree holder and attended few numbers of training relevant to teaching IP students. The teacher-respondents assessed "Always Practiced" on the dimensions of teaching Mathematics strategies among IP students. The students assessed "Always Practiced" on the dimensions of teaching Mathematics strategies among IP students. The IP students were rated "Satisfactory" in both Mathematics subjects Algebra and Geometry. There is significant difference on the perception towards dimensions on teaching Mathematics strategies for IP students between teachers and students. There is significant difference on the perception of the teacher-respondents while no significant differences to the students towards dimensions of teaching Mathematics strategies among IP students as to Creating Student's Learning Environment Focused on Mathematics Goals, Providing Opportunities for Independent and Collaborative, Facilitating Mathematical Discussion, Using Appropriate Mathematics Language, connections, tools, and presentations, Developing and Using Teacher Knowledge to Initiate Learning and Assessing Student Academic Performance in Algebra and Geometry. The researcher offered the following recommendations based in the study that the school management is encouraged to organize an in-house teacher's capability training in order to enhance motivational techniques and teaching strategies in Mathematics among IP students; the teachers are encouraged to be resourceful and creative in organizing the lesson in order to unlock the difficulty among the students in learning mathematics; the teachers are encouraged to conduct and in-depth study on the nature of the students and apply the learning activity and exercises based on their capability and competence**.**

Background

Teaching practices that enhance student learning have been extensively researched to seek an understanding if what it is constitutes quality teaching. At the secondary level, it can therefore be justified that student academic performance is a reasonable indicator of teacher effectiveness (Whittle et al., 2018).

Teachers' formative education is a factor that affects the quality of education and the academic performance of students (Leikin & Zazkis, 2010). For (Kieran et al., 2011).it is essential for teachers at any educational level, to develop and implement skills related to the teaching of mathematics in order to contribute to the quality of education in students. (National Council of Teachers of Mathematics, 2014),NCTM, states that the teaching of mathematics requires teachers who possess a deep understanding of the disciplinary knowledge and of the didactic skills, through which they would make teaching become effective in the development of students' learning.

Despite the important role that mathematics plays in society, there has always been poor performance in the subject. Educators, trainers, and researchers have long been interested in exploring variables contributing effectively for quality of performance of learners in mathematics. The quality of students' performance remains at top priority for educators. It is meant for making a difference locally, regionally, nationally and globally (Farooq et al., 2011).

The purpose of this study is to determine the impact of teaching practices of teachers who teach IP students to improve the academic performance of the students in mathematics subject. This study is important attempt, because it deals with important issue, which is teaching practices and their effects on students' academic performance. It also gives useful information about the relation between teaching practices and academic performance of the students. It serves as the basis for the teachers so they can take the study results into consideration when preparing for their teaching.

Significance of the Study

This study was considered a great importance and beneficial to the following;

Mathematics Teachers. The finding of the study would be used as benchmark in improving the teaching technique and scheme. It would also serve as a breakthrough in teaching and learning processes thru the enhancement of teaching strategies.

School Administration. Relevant information acquired in this study would give insights to the administrators on how to improve programs for school advancement, enhance teaching capability and boast instructional techniques and innovation.

Students. This could help the students in their learning as they are the one who are directly affected by the strategies used by the teachers it would also help them to enrich their mathematical literacy skills.

Future Researchers. The finding of this study can be used as documents and basis for further advancement and innovation of teaching strategies.

Statement of the Problem

The study aimed to assess the level of teaching practices in mathematics in relation to the academic performance of indigenous students in selected schools of Zambales during SY 2019-2020.

Specifically, it sought to provide answers to the following questions:
1. What is the profile of Mathematics Teacher in terms of:
   1.1 age;
   1.2 highest educational attainment; and
   1.3 number of relevant trainings?
2. What is the academic performance of IP students in mathematics as taught by teachers with different teaching strategies in the following subjects:
   2.1 Algebra; and
   2.2 Geometry?
3. How may the perceptions of the IP teachers on the level of teaching practices may be described in the following dimensions:

3.1 Creating student's learning environment focused on Mathematics goals;

3.2 Providing opportunities for Independent and Collaborative Learning;

3.3 Facilitating mathematics discussion;

3.4 Using appropriate Mathematics Language;

3.5 Making Sense of Mathematics through worthwhile tasks, connections, tools and presentations;

3.6 Developing and Using Teacher Knowledge to Initiate Learning; and

3.7 Assessing Students Academic Performance in Algebra and Geometry?

4. How may the perceptions of the IP students on the level of teaching practices may be described in the following dimensions:

4.1 Creating student's learning environment focused on Mathematics goals;

4.2 Providing opportunities for Independent and Collaborative Learning;

4.3 Facilitating mathematics discussion;

4.4 Using appropriate Mathematics Language;

4.5 Making Sense of Mathematics through worthwhile tasks, connections, tools and presentations;

4.6 Developing and Using Teacher Knowledge to Initiate Learning; and

4.7 Assessing Students Academic Performance in Algebra and Geometry?

5. Is there significant difference on the perception between teacher and students towards the level of teaching practices?

6. Is there significant difference on the perception towards dimensions on Mathematics teaching practices for Indigenous People (IP)students when grouped according to:

6.1 Teacher; and

6.2 Student?

7. Is there significant relationship between the academic performance of IP students and the perception of students towards the level of mathematics teaching practices among IP students?

Scopes and Limitations

The study dealt to determine the level of teaching practices in mathematics in relation to indigenous students' academic performance in selected schools in Zambales SY 2019-2020.

The study utilized the descriptive research design with questionnaire as the main instrument in gathering data from the randomly selected teachers and students. The study is limited to determine the profile of teachers with regards to age, highest educational attainment, and number of relevant trainings. It also dealt to determine the student academic performance in Algebra and Geometry. The study was limited to determine the perceptions of the teacher and student respondents towards dimensions on the level of teaching practices in Mathematics as to (1) Creating student's learning environment focused on Mathematics goals; (2) Providing opportunities for Independent and Collaborative Learning; (3) Facilitating mathematics discussion; (4) Using appropriate Mathematics Language; (5) Making Sense of Mathematics through worthwhile tasks, connections, tools and presentations; (6) Developing and Using Teacher Knowledge to Initiate Learning; and (7) Assessing Students Academic Performance in Algebra and Geometry.

Methods
Research Design

The descriptive method of research was used in this study. This method is a valid method for researching specific subjects and as a precursor to more quantitative studies (Shuttleworth, 2017). The description on the level of effectiveness of teaching practices of teachers who teach IP students in order to improve their academic performance in their mathematics subject.

The primary goal of this strategy is to describe the nature of the situation as it currently exists. It is also less expensive and more comprehensive than any other inquiry method. Aside from the descriptive method's extensive use, the data acquired in this type of study is seen to be quite valuable in assisting people in adjusting to and dealing with typical life situations.

Descriptive research is to describe an audience's features or behavior. Its goal is to describe, explain, or validate some kind of hypothesis or objective in relation to a specific group of people. It's also beneficial when testing and measuring a big number of samples

isn't possible for more quantitative sorts of investigation. (Shuttleworth, 2017). Furthermore, descriptive research design is a scientific method which involves observing and describing the behavior of a subject without influencing it in any way (Shuttleworth, 2017). Descriptive research design, on the other hand, entails the description, recording, analysis, and interpretation of current nature, composition, or processes of phenomena, according to (Manuel & Medel, 2014). The emphasis is on current situations in terms of how a person, organization, or item believes or performs. It frequently entails some form of comparison or contrast. The descriptive technique aids the researcher in becoming acquainted with his desired goals in the shortest time possible, and it has been employed in many areas of study for the explanation of many types of problems.

Respondents and Location
The target population of the study includes the 8 teachers handling Mathematics 8 and 200 grade 8 IP students in selected schools in Zambales.

Table 1. Distribution of the Respondents According to School

Schools	Teacher	IP Students
Lakas High School	1	44
Loob Bunga High School	2	45
Baquilan High School	1	44
Dujoc High School	1	8
Cawag High School	1	44
Batiawan Integrated School	1	7
Sitio Gala High School	1	8
Total	8	200

The study was conducted among Teachers handling Mathematics 8 and grade 8 IP students of selected schools in Zambales which comprises seven (7) High Schools and Integrated Schools. Lakas High School, Loob Bunga High School, Baquilan Resettlement High School, Dojoc Balite Integrated School, Batiawan Integrated School Annex, Cawag High School and Sitio Gala High School. Figure 2 shows the map of the towns of Zambales.
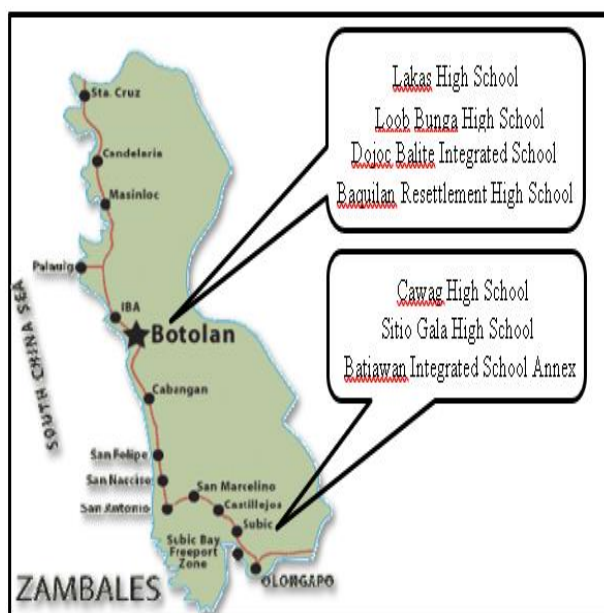

Figure 2. A Map Showing the Location of the Study

The target population of the study includes the 8 teachers handling Mathematics 8 and 200 grade 8 IP students in selected schools in Zambales.

Instruments

The researcher had formulated and developed questionnaire base on her readings. The researcher used questionnaire as an instrument for the collection of data which was developed by the researcher from the research entitled Mathematics Teaching Practices in Relation to Students' Academic Performance at the Philippine Merchant Marine Academy of Jesus C. Vallente. The first part of the survey questionnaire was the teachers profile of age, highest educational attainment and number of training attended and the second part is the survey questionnaire related to the level of Mathematics Teaching Practices to be rated by the teachers and the students. Part 3 of the instrument was the student academic performance in Algebra and Geometry.

Before the final distribution of the instrument the researcher had validated the drafted instrument and sought the approval of the defense committee panel members. The researcher had integrated all the comments and suggestions for the final revision of the instrument. After the approval, the researcher had reproduced the final copies based on the number on the target population of the respondents.

Result and Discussion

This chapter presents the gathered and processed data in tabular form, analyzed and provide interpretation in order to give a clear and better understanding on the problems asked earlier in Chapter 1.

Teachers Profile

Table 2 shows the frequency and percentage distribution on the teacher-respondents profile variables of age.

Table 2. Frequency and Percentage Distribution on the Teacher-Respondents Profile Variables (N=8)

Profile Variables		Frequency (f)	Percentage (%)
Age	40 – 49 years old	1	12.50
Mean=32 years old	30 – 39 years old	4	50.00
	20 – 29 years old	3	37.50
	Total	8	100.00
Highest Educational Attainment	Bachelor's Degree	5	62.50
	Master of Arts in Education	2	25.00
	Others	1	12.50
	Total	8	100.00
Number of Trainings	5 – 9 trainings	3	37.50
Mean=4 trainings	0 – 4 trainings	5	62.50
		8	100.00

Age. Out of eight (8) teacher-respondents, majority are from age group of 30-39 years old with 4 or equivalent to 50.00%; 3 or 37.50% are from 20-29 years old and only 1 or 12.50% is from 40-49 years old. Highest Educational Attainment. Out of eight (8) teacher-respondents, majority are bachelor's degree holders with 5 or equivalent to 62.50%; 2 or 25.00% is a Master of Arts in Education major in Mathematics and only 1or equivalent to 12.50% whose educational attainment in BS degree with master's units. Number of Trainings. Out

of eight (8) teacher-respondents, majority have attended 0-4 training with 5 or equivalent to 62.50%; and 3 or equivalent to 37.50% with 5-9 trainings attended. The computed mean number of trainings attended was 4 trainings. The data simply implies on the limited number of training for teachers relevant to teaching IP students in Mathematics. The attendance to training is imperative to the academic performance of the students whereby as the result of the study of (Sattar & Awan, 2019) on the "Impact of teachers training to the academic

performance of the students revealed that a big difference was seen among those students who were taught by trained teachers while nominal change was noted among students taught by untrained teachers. So, our results suggest that teachers must be trained for the better academic achievements of the students. Cramming system should be discouraged in the schools. (Sattar et al., 2019).

Academic Performance in Indigenous People Students in Algebra and Geometry

Table 3 shows the Frequency and Percentage Distribution on the Academic Performance of IP Student in Algebra and Geometry.

Table 3. Frequency and Percentage Distribution on the Academic Performance of Indigenous Student in Algebra and Geometry (N=200)

Academic Performance	Algebra	Geometry
Outstanding (90-100)	22	26
Very Satisfactory (85-89)	55	60
Satisfactory (80-84)	72	62
Fairly Satisfactory (75-79)	43	43
Did Not Meet Expectation (below 75)	8	9
Total	200	200
Mean	83.35	83.69
Interpretation	Satisfactory	Satisfactory

Out of two hundred (200) students, majority which is equivalent to 72 have a grade of 80-84 with "Satisfactory" rating and least with only 8 with grade of below 75 and rating of "Did not meet the expectation". The computed mean of academic performance in Algebra was 83.35 interpreted as Satisfactory.

In Geometry, majority with 62 have a grade of 80-84with "Satisfactory" rating and the least with 9 have a grade of below 75 and rating of "Did not meet the expectation". The computed mean of academic performance in Geometry was 83.69 interpreted as "Satisfactory".

The satisfactory academic performance of the IP students could be attributed on their study habits and learning style. Some have the lack of interest to study the lesson because of premeditated assumption on the difficulty of the subject. There is a need for intervention program that would help improve the academic achievement. According to (Diaz & Dio, 2017) and (Tabago, 2012) who found out that intervention materials contributed to better learning of the concepts among students resulting to better academic performance.

Test of Differences on perception towards teaching practices between teacher and student responses

Table 4 shows the t-test to determine differences on the perception towards teaching practices in Mathematics for IP students between the teacher and student responses.

Table 4. t-test to determine differences on the perception towards teaching practices in Mathematics for Indigenous students

Classification		N	Mean	Std. Deviation	Std. Error Mean
Teacher	Perception	8	3.4054	0.41269	0.14591
Student	Perception	200	3.6036	0.35549	0.02514

			One-Sample Test			
			Test Value = 0			
Classification	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Teacher Perception	23.339	7	0.000	3.40536	3.0603	3.7504
Student Perception	143.361	199	0.000	3.60364	3.5541	3.6532

There is significant difference on the perception towards teaching mathematics strategies for Indigenous People students between the teacher and student responses manifested on the computed t-value of 0.000 which is lower than 0.05 Alpha Level of Significance, therefore the Null Hypothesis Rejected.

The data clearly manifest on the contrast of opinion of the two respondents. In some degree, the student does not conform on the claims of teachers to practice mathematical teaching strategies. Effective math teaching should not be taken in isolation but interpreted as part of a complex web of factors that can affect student learning. It incorporates elements of teaching practices related to the classroom community, classroom discussion.

Effective teachers are very important for students learning. However, teachers' effectiveness is difficult to define since there has not been a consensus agreement on what measured quality teacher (Stronge et al., 2011). (Stronge et al., 2011) identified four dimensions that used to characterize an effective teacher as follows: (1) Instructional effectiveness; (2) Uses of assessment for student learning; (3) Positive learning environment; and (4) Personal quality of the teacher.

Test of Differences on the perception towards dimensions on Mathematics teaching practices for Indigenous People (IP)students
Teacher

Table 5 shows the Analysis of Variance to test differences on the perception of the teachers towards dimension on Mathematics teaching practices for Indigenous People (IP) students.

There is significant difference on the perception of the teachers towards dimensions on teaching mathematics practices for Indigenous People manifested on the computed F-value of 2.5276591 which is greater than (<) F critical value of 2.24640, therefore the Null Hypothesis is Rejected.

Table 5. Analysis of Variance to test differences on the perception of the teachers towards dimension on Mathematics teaching practices for Indigenous People (IP) students

Groups	Count	Sum	Average	Variance
*Creating Student's Learning Environment Focused on Mathematics Goals	10	36.03	3.603	0.048645556
*Providing Opportunities for Independent and Collaborative	10	34.03	3.403	0.019978889
*Facilitating Mathematical Discussion	10	34.28	3.428	0.046617778
*Using Appropriate Mathematics Language	10	34.14	3.414	0.017693333
*Making senses of Mathematics through worthwhile tasks, connections, tools, and presentations	10	32.53	3.253	0.01709
*Developing and Using Teacher Knowledge to Initiate Learning	10	34.53	3.453	0.014645556
*Assessing Student Academic Performance in Algebra and Geometry	10	33.02	3.302	0.185062222

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	0.75772	6	0.126286	2.5276591	0.02954	2.24640
Within Groups	3.1476	63	0.049961			
Total	3.90532	69				

The data clearly demonstrate on the teacher-respondents divergence and disagreement of opinion and assessment on the practices towards dimensions such as (a) Creating Student's Learning Environment Focused on Mathematics Goals; (b) Providing Opportunities for Independent and Collaborative; (c) Facilitating Mathematical Discussion; (d) Using Appropriate Mathematics Language; (e) Making senses of Mathematics through worthwhile tasks, connections, tools, and presentations; (f) Developing and Using Teacher Knowledge to Initiate Learning; and (g) Assessing Student Academic Performance in Algebra and Geometry.

Effective teacher model the process of explaining and justifying, guiding students into mathematical connections. Students become co-constructors of knowledge through asking questions, justifying their works, and communicating their ideas to each other (Wagganer, 2015). Students are asked to explain their ideas, justify their thinking, and question one another on their work and compare ideas and solutions (Suurtamm et al., 2015). Teachers guide and extent students through mathematics discussion questions, sentence stems (sometimes called sentence starters), asking for examples, and asking for justification of work (Suurtamm et al., 2015).

Students

Table 6 shows the Analysis of Variance to test differences on the perception of the students towards dimension on Mathematics teaching practices for Indigenous People (IP) students.

There is no significant difference on the perception of the students towards dimensions on teaching mathematics practices for Indigenous People manifested on the computed F-value of 0.794372 which is lower than (<) F critical value of 2.2464, therefore the Null Hypothesis is Accepted.

The data clearly demonstrate on the teacher-respondents parallelisms of opinion and assessment of "Always Practiced" on the dimensions such as (a) Creating Student's Learning Environment Focused on Mathematics Goals; (b) Providing Opportunities for Independent and Collaborative; (c) Facilitating Mathematical Discussion; (d) Using Appropriate Mathematics Language; (e) Making senses of Mathematics through worthwhile tasks, connections, tools, and presentations; (f) Developing and Using Teacher Knowledge to Initiate Learning; and (g) Assessing Student Academic Performance in Algebra and Geometry.

Table 6. Analysis of Variance to test differences on the perception of the students towards dimension on Mathematics teaching practices for Indigenous People (IP) students

Groups	Count	Sum	Average	Variance
*Creating Student's Learning Environment Focused on Mathematics Goals	10	36.59	3.659	0.0185433
*Providing Opportunities for Independent and Collaborative	10	36.21	3.621	0.0140322
*Facilitating Mathematical Discussion	10	35.91	3.591	0.0066322
*Using Appropriate Mathematics Language	10	36.06	3.606	0.01696
*Making senses of Mathematics through worthwhile tasks, connections, tools, and presentations	10	35.88	3.588	0.0079955
*Developing and Using Teacher Knowledge to Initiate Learning	10	36.23	3.623	0.0023788
*Assessing Student Academic Performance in Algebra and Geometry	10	35.58	3.558	0.0241288

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	0.0617371	6	0.010289	0.794372	0.5778	2.2464
Within Groups	0.81604	63	0.012953			
Total	0.8777771	69				

Reciprocal Peer Tutoring (RPT) is a form of collaborative learning that involves students of similar academic backgrounds experiencing interchanging roles of tutor and learner (Gazulaa et al., 2016). RPT is an effective instructional strategy for teaching classroom diverse learners because it promotes academic gains as well as social enhancement (Access Center, 2017). RPT may be defined as a cooperative and active learning strategy in which students help each other in dyads, while learning at the same time (Alegre Ansuategui & Moliner Miravet, 2017).

The metaphorical analysis used the metaphorical images associated to different mathematical operation of grade pupils in an exclusive school for girls has useful implications for Independent learning and in improving students' cognition (Valdez & Villorente-Saulo, 2014).

Test of Relationship between academic performance and the perception towards dimensions on teaching mathematic practices

The Pearson Product Moment Coefficient of Correlation to test relationship between the academic performance and the dimensions towards teaching mathematic practices for Indigenous People (IP) students is shown in Table 7.

There is negligible relationship between the academic performance and the dimensions towards teaching mathematics practices for indigenous people students manifested on the computed Pearson r –value of -0.051.

The computed Significant or P-value of 0.477 which is higher than (>) 0.05 Alpha Level of Significance, the Null Hypothesis is Accepted, hence there is no significant relationship.

Table 7. Pearson Product Moment Coefficient of Correlation to test relationship between the academic performance and the dimensions towards teaching mathematic practices for Indigenous People (IP) students

Sources of Correlations		Academic Performance	Teaching mathematic practices for Indigenous People
Academic Performance	Pearson Correlation	1	-0.051
	Sig. (2-tailed)		0.477
	N	200	200
Teaching mathematic practices for Indigenous People	Pearson Correlation	-0.051	1
	Sig. (2-tailed)	0.477	
	N	200	200

The way the teacher presents an activity or concept strongly influences the way the learners react to it. An effective teacher utilizes a variety of techniques and strategies to develop productive discipline and to motivate learners. The primary difference between effective and ineffective teachers does not lie in the amount of knowledge they have about content, the type of certificate held, the highest degree earned, or the years they have been teaching. Rather the difference lies more fundamentally in the way they deliver their knowledge and skills while interacting with the students in their classroom to improve their performance (Barge, 2014).

Effective teaching strategies have a positive impact on producing good and fast learning outcomes. It would be more helpful to consider teaching strategies as an aid to the teacher just like any other teaching aid. Effective teaching strategies can offer the teacher much more to enhance and support students' learning. (Raba, 2017).

Conclusion and Recommendation
Summary
1. Teachers Profile

    Age   Out of eight (8) teacher-respondents, majority are from age group of 30-39 years old with 4 or equivalent to 50.00%; 3 or 37.50% are from 20-29 years old and only 1 or 12.50% is from 40-49 years old. The computed mean age of the teacher-respondents was 32 years old.

    Highest Educational Attainment. Out of eight (8) teacher-respondents, majority are bachelor's degree holders with 5 or equivalent to 62.50%; 2 or 25.00% is a Master of Arts in Education major in Mathematics and only 1or equivalent to 12.50% whose educational attainment in BS degree with masteral units.

    Number of Trainings. Out of eight (8) teacher-respondents, majority have attended 0-4 training with 5 or equivalent to 62.50%; and 3 or equivalent to 37.50% with 5-9 trainings attended. The computed mean number of trainings attended was 4 trainings.

2. Academic Performance in Indigenous People Students in Algebra and Geometry. Out of two hundred (200) students, majority which is equivalent to 72 have a grade of 80-84 with "Satisfactory" rating and least with only 8 with grade of below 75 and rating of "Did not meet the expectation". The computed mean of academic performance in Algebra was 83.35 interpreted as Satisfactory. In Geometry, majority with 62 have a grade of 80-84with "Satisfactory" rating and the least with 9 have a grade of below 75 and rating of "Did not meet the expectation". The computed mean of academic performance in Geometry was 83.69 interpreted as "Satisfactory".

3. Test of Differences on perception towards teaching practices between teacher and student responses. There is significant difference on the perception towards teaching mathematics strategies for Indigenous People students between the teacher and student responses manifested on the computed t-value of 0.000 which is lower than 0.05 Alpha Level of Significance, therefore the Null Hypothesis Rejected.

4. Test of Differences on the perception towards dimensions on Mathematics teaching practices for Indigenous People (IP)students.

    Teacher. There is significant difference on the perception of the teachers towards dimensions on teaching mathematics practices for Indigenous People manifested on the computed F-value of 2.5276591 which is greater than (<) F critical value of 2.24640, therefore the Null Hypothesis is Rejected.

    Students. There is no significant difference on the perception of the students towards dimensions on teaching mathematics practices for Indigenous People manifested on the computed F-value of 0.794372 which is lower than (<) F critical value of 2.2464, therefore the Null Hypothesis is Accepted.

5. Test of Relationship between academic performance and the perception towards dimensions on teaching mathematic practices. There is negligible relationship between the academic performance and the dimensions towards teaching mathematics practices for indigenous people students manifested on the computed Pearson r –value of -0.051. The computed Significant or P-value of 0.477 which is higher than (>) 0.05 Alpha Level of Significance, the Null Hypothesis is Accepted, hence there is no significant relationship.

Conclusions
Based on the summary of the investigations, the researcher concluded that:
1. The teacher-respondent is in her early adulthood, bachelors' degree holder and attended few numbers of training relevant to etching IP students.
2. The teacher-respondents assessed "Always Practiced" on the dimensions of teaching Mathematics strategies among IP students as to (a) Creating Student's Learning Environment Focused on Mathematics Goals; (b) Providing Opportunities for Independent and Collaborative; (c) Facilitating Mathematical Discussion; (d) Using Appropriate Mathematics Language; (e) Making senses of Mathematics through worthwhile tasks, connections, tools, and presentations; (f) Developing and Using Teacher Knowledge

to Initiate Learning; and (g) Assessing Student Academic Performance in Algebra and Geometry.
3. The students assessed "Always Practiced" on the dimensions of teaching Mathematics strategies among IP students as to (a) Creating Student's Learning Environment Focused on Mathematics Goals; (b) Providing Opportunities for Independent and Collaborative; (c) Facilitating Mathematical Discussion; (d) Using Appropriate Mathematics Language; (e) Making senses of Mathematics through worthwhile tasks, connections, tools, and presentations; (f) Developing and Using Teacher Knowledge to Initiate Learning; and (g) Assessing Student Academic Performance in Algebra and Geometry.
4. The IP students were rated "Satisfactory" in both Mathematics subjects Algebra and Geometry.
5. There is significant difference on the perception towards dimensions on teaching Mathematics strategies for IP students between teachers and students.
6. There is significant difference on the perception of the teacher-respondents while no significant differences to the students towards dimensions of teaching Mathematics strategies among IP students as to (a) Creating Student's Learning Environment Focused on Mathematics Goals; (b) Providing Opportunities for Independent and Collaborative; (c) Facilitating Mathematical Discussion; (d) Using Appropriate Mathematics Language; (e) Making senses of Mathematics through worthwhile tasks, connections, tools, and presentations; (f) Developing and Using Teacher Knowledge to Initiate Learning; and (g) Assessing Student Academic Performance in Algebra and Geometry.
7. There is negligible relationship between the academic performance and the Mathematics teaching strategies for IP students.

Recommendations
Based on the summary of the investigations conducted and the conclusions arrived at, the researcher offered the following recommendations based on salient findings obtained in the study:
1. The school management is encouraged to organize an in-house teacher's capability training in order to enhance motivational techniques and teaching strategies in Mathematics among IP students.
2. The teachers are encouraged to be resourceful and creative in organizing the lesson in order to unlock the difficulty among the students in learning mathematics.
3. The teachers are encouraged to conduct and in-depth study on the nature of the students and apply the learning activity and exercises based on their capability and competence.
4. The teachers are fortified on the conduct of motivational games, puzzles, demonstration method to make learning mathematics more meaningful.
5. To conduct a follow-up or similar study with in-depth and wider in scope so as to validate the findings obtained in the study.

Ms. Rachelle C. Diviva, Education Supervisor in Mathematics, for the reinforcement and inspiration in pursuing this study.

Mrs. Bernadette O. Umayam, the researcher's school head, who has given her support and unselfish intellect to pursue this study;

Her colleagues in the profession, whose support, prayers, understanding and intellectual help had been her source of strength;

All mathematics teachers and IP students of the secondary schools in Division of Zambales for allotting their time in answering the researcher's questionnaires and queries; and

Above all, to Jehovah God, for the gift of life, protection and knowledge. His uncountable blessings for the completion of this research study.

References

Access Center (2017). Using Peer Tutoring to Facilitate Access. https://www.readingrockets.org/article/using-peer-tutoring-facilitate-access.

Alegre Ansuategui, F.G., & Moliner Miravet, L. (2017). Emotional and Cognitive Effects of Peer Tutoring among Secondary School Mathematics Students. Int. J. Math.Educ.Sci.Tecnol.48, 1185-1205.

Barge, D.J. (2014). Teacher assessment on performance standard 3: Instructional strategies. Georgia Department of Education-Teacher Keys Effectiveness System.

Diaz ED, Dio RV. (2017) Effectiveness of Tri-in-1 strategic intervention materials for grade 9 students through solomon four-group design. Published in Asia Pacific Journal of Education, Arts and Sciences.

Farooq, haudhry, Shafiq, & Berhanu (2011). Factors Affecting Students' Quality of Academic Performance: A Case of Secondary School level.

Gazulaa, S., McKennab, L., Cooperd, S., & Peliadelic, P. (2016). A Systematic Review of Reciprocal Peer Tutoring Within Tertiary Health Professional Educational Programs.

Kieran, C., Tanguay, D., & Solares, A. (2011). Teachers participating in a research project on learning: the spontaneous shaping of researcher-designed resources within classroom teaching practice. In Ubuz, B. (Ed.), Proceedings of the 35th Conference of the International Group for the PME (Vol. 3, pp. 81-88). Ankara, Turkey: PME.

Leikin, R. & Zazkis, R., 2010. The content-dependence of prospective teachers' knowledge: A case of exemplifying definitions. International Journal of Mathematical Education in Science and Technology, 4, 451–466.

Manuel & Medel (2014). Descriptive Research, https://www.coursehero.com/file/7233733/Descriptive-research/.

National Council of Teachers of Mathematics (NCTM). (2014). Principles to Actions: Ensuring Mathematical Success for All. USA: NCTM.

Raba, A. (2017). The Impact of Effective Teaching Strategies on Producing fast and Good Learning Outcomes.

Sattar, A. & Awan, A.G. (2019). The Impact of Teachers' Training on the Academic Achievements of Students.

Sattar, Abdul, & Awan,2019. The Impact of Teachers' Training on the Academic Achievements of Students. https://www.researchgate.net/piblication/334397585THE_IMPACT_OF_TEACHERS'_TRAINING_ON_THE_ACADEMIC_ACHIEVEMENTS_OF_STUDENTS.

Shuttleworth, M. (2017). Descriptive Research Design Retrieved from https://explorable.com/users/martyn https://explorable.com/descriptive-research-design.

Stronge, J., Ward, T., & Grant,L. (2011). What Makes Good Teachers Good? A Cross-Case Analysis of the Connection Between Teacher Effectiveness and Student Achievement.

Suurtamm, C., Quigley, B., & Lazarus, J. (2015). Making space for students to think mathematically. What Works? Research into Practice. Research Monograph #59. Student Achievement Division. Victorian Institute of Teaching. (2017). Australian Professional Standards for Teachers. Melbourne, VIC: Victorian State Government Retrieved from http://www.vit.vic.edu.au/registered-teacher/standards/apst.

Tabago LC. (2012). Effectiveness of constructivist approach experiments in teaching selected Physics concepts. IAMURE International Journal of Multidisciplinary Research. DOI: 2. 10.7718/iamure.v2i1.64.

Valdez, P. N. & Villorente-Saulo, J. (2014). "Math is like… because…" A metaphor analysis of Filipino students' perceptions of mathematical operations. Proceedings of the International Conference: DRAL 2/IL, 138-144.

Wagganer, E. L. (2015). Creating math talk communities. Teaching Children Mathematics, 22(4), 248-254.

Whittle R., Telford A., & Benson A. (2018). Teacher's Perception of how they Influence Student Academic Performance in VCE Physical Education.