Variability Affecting Mathematics Performance Of Grade 7 Students Of Selected Public High School In Las Piñas

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Abstract- The study was conducted to determine the significant relationship between teacher-respondents' attitude, Proficiency, Instructional Practices, and Strategies in Teaching Mathematics towards the performance of Grade 7 students in selected public junior high school in the Division of Las Piñas, using quantitative descriptive correlational as a research design. Purposive sampling technique was used in choosing teacher-respondents and a stratified random sampling technique was also used for specific student-participants. The participants were the selected 382 students' and 42 teachers teaching Grade 7 Mathematics with complete data which were considered in this study. Descriptive and inferential statistics and relevant literature and studies were utilized to analyze and interpret the data gathered. Significant findings revealed that the performance of students in Mathematics is Satisfactory. Furthermore, results revealed that the teachers Strongly Agree that they treat their students with equity and Agree that they have positive classroom management. Moreover, teachers were found Proficient in Grade 7 topics in Mathematics. It was also revealed that teachers had Often for instructional practices and teaching strategies in active learning, cognitive activation and teacher-directed instruction respectively. The significant relationship between the student's performance and the teacher-respondents' variability bore no significant relationships. Thus, it negates the significant correlation on teacher factors towards student performance. It is recommended to always use instructional materials and the teaching strategies to rectify Mathematics teaching that has recognized the importance of addressing effectively the current issues in connection to the totality of the teaching and learning process, by emphasizing the learner-centered curriculum to uplift the student's academic performance in Mathematics.

Index- Attitude, Instructional Practices, Mathematics Performance, Proficiency, Strategies.

I - INTRODUCTION

Mathematics played a major role in modern society in its global modernization and technologically advanced in economics. It is primarily significant to modern society that provides the essential foundational knowledge in the economy. It is also necessary for the physics and related sciences, Information and Communications Technology, financial services, business, and technology. It also has the expanding usefulness in biology, social sciences, as well as in medicine. Mathematics became the foundation of most industrial and scientific research and advanced state of development. To a greater extent, numerous structures and most complex systems in the contemporary world can only be implicit using mathematics, and most of the modern and high-in or technologically design system relied on mathematical products as stated in, Role of Mathematics in the Development of Society, Fatima (n.d.).

The K to12 Basic Education Curriculum of the Philippines, also known as Republic Act No. 10533 or the Enhanced Basic Education Act of 2013, the 13-year program is the most delicate phase for learning the basic education program. And it is globally known as the standard for all learners. The K to12 curriculum is standard and competence-based inclusively built within the necessary of the learners and society. The Department of Education must observe the principles and the standards in establishing the K to 12 curriculum. These are, (a) must be inclusive, learner-centered, and developmentally suitable, (b) also a research-based, appropriate and responsive, (c) shall be cultural-sensitivity, (d) global and contextualized teaching and learning, (e) in teaching shall be in pedagogical approach that are enquiry-based, constructivist and thoughtful, unifying and collaborate, (f) it must comply to the standard and structure in Mother Tongue-Based Multilingual Education (MTB-MLE), (g) use of spiral progression approach in curriculum to establish the proficiency skills and knowledge in every level, (h) shall be adaptable and responsive enough to localized and indigenize to heighten education and social context. Also, Republic Act No. 10533, Sec. 7, focuses on Teacher Training and Education, to assure the K to 12 education program meets the required quality educators and schools leaders. Training, education, and

professional development progress should organize as well as administered regularly to constantly improved the teacher's knowledge and skills (Philippine Government Official Gazette).

In modern times, the expansion of mathematical methods in any field of sciences became more abstract and complex. Thus, it is necessary for all schools to have a curriculum that creates a great demand for mathematical training. Moreover, continuous professional development and training in a research-based and learner-centered curriculum are vital to develop and understand the differences of the continuous changes on the learner's performance towards learning the subject matter individually, and it is also essential for the teachers to have differentiated teaching strategy to address the diverse learners in achieving their goals.

The level of mathematics in junior high school has its own distinctive character particularly in the development in critical thinking which takes place in every grade level. Most especially in grade 7 as foundation of developing the learners' numeracy skills. A student who entered the 7th grade is mostly immature, wherein this stage, the students' development is critical on the part of the teachers in teaching mathematics. In four years in junior high school, students are expected to be acquainted with many of the most important mathematical ideas that exist upon entering the 11th grade in senior high mathematics, as observed in the University of Chicago School Mathematics Project (UCSMP).

The country's first participation in the International Mathematics Olympiad (IMO) for high school students in 1988, showed continuous improvement on its performance, from 2015 of rank 36 to rank 17 in 2016 to 2018. More than 100 countries participated in the IMO in 2018, which is held annually since 1959.

Also, in 2018 the Philippines won the gold medal in Singapore International Math Olympiad (SIMOC), from different categories, held at Canadian International School, Lakeside Campus, Singapore in its 4th-year run participated by 16 countries in Asia. It observed that many Filipino students excel in mathematical skills individually as they participated in different international mathematics contest.

However, the Trends in International Mathematics and Science Study (TIMSS) as revealed the country's last participation in the said event in 2003, the Philippines is left behind in neighboring countries in Asia, like Korea, Singapore, Japan, Hong Kong (SAR- Special Administrative Region), Chinese and Taipei, which continuously improved in the comprehensive examination called TIMSS.

Nevertheless, with regard to the significant performance among Filipino students, there are still a lot of students who suffer in their mathematics subjects, despite the teachers' effort of using different intervention strategies to cater the needs of the slow learner and with difficulties to learn in Math, to cope with their learning style and attitude. Thus, teaching and learning process would be more interactive and more efficient. The use of appropriate different technology advancements like electronic gadgets, computer, modern calculators, and the internet is also integrating with teaching mathematics and recognized by the DepEd to improve the learners learning capability of the students.

Locally speaking, in the Division of Las Piñas, based on the quarterly Assessment or the Periodical Test given by the Schools Division Office, Mathematics is one on the bottom lines or had the lowest scores in terms of Mean Percentage Score (MPS). This similar problem almost occurred in the majority of public schools from the said division which the researcher noticed. It identified as a long-time problem in grade 7 mathematics that has always low in MPS.

Consequently, the negative results prompted the researcher to find out if the teachers' variability might have influenced the performance of the students in preparing them into the next phase or next grade level in learning Mathematics. With these problems, the researcher's interest is to pursue this study in finding out the factors that affects the mathematics performance among grade 7 students, considering the learners' individual differences, and the shifting of environment from elementary to secondary education, a stage of growth and development (adolescence period) and capabilities in a learner-centered curriculum of K-12 program. Likewise, it is also to address the professional development of the teachers' in attitude, proficiency, instructional practices, and strategies in teaching mathematics, since there were fewer studies conducted about the teacher's factors that may be contributed or affects the student's performance in mathematics.

II – METHODOLOGY

A descriptive-correlational design was utilized in this study to investigate the variability that affects the performance of grade 7 students in mathematics.

The total teacher-respondents of the study was forty-two (42) grade 7 mathematics teachers, teaching Mathematics 7 classes from the different public junior high schools in the Division of Las Piñas and 382 student-respondents, selected through random sampling.

There are different sources of data for this study. The main instrument in gathering and collecting the desired data was adapted and modified from the three (3) sources. First, from "*Pan-Canadian Assessment Program Main Administration 2010 Teacher Questionnaire*", by Council of Ministers of Education, Canada, 2010, Toronto, ON: Author Copyright 2010 by the Council of Minister of Education, Canada, and Adapted with permission" for proficiency and instructional practices in teaching mathematics. Second, for the strategies in teaching mathematics from Organisation for Economic Cooperation and Development (OECD), Education Working Papers Number 148, of "*Teaching Strategies for Instructional Quality: Insights from the TALIS-PISA link data.*" It was further developed in the paper of Le Donne, Fraser and Bousquet (2016),

with the investigation of classroom practices for Mathematics Teachers that feature the existing three strategies in teaching: *Active Learning, Cognitive Activation, and Teacher-directed Instructions*. Third, from "*Teacher Affective Attitudes Inventory: Development and Validation of a Teacher Self-Assessment Instrument*" by King (2017) of Antioch University Repository and Archive. On the initial scale for positive relationships in *attitude towards equity* is a set of a teacher's disposition about equitable treatment of students and attitudes towards classroom management for *a classroom environment.*

This instrument addressed to teachers of mathematics about their academic and professional backgrounds, such as Attitudes towards teaching mathematics, Proficiency in teaching mathematics, instructional practices, and strategies in teaching mathematics. The researcher used it for the survey in grade 7 mathematics teachers in the division of Las Piñas. The researcher also gathered the final mathematics grades of selected grade 7 students that are included in this study.

III – RESULTS AND DISCUSSIONS

Data for this study was presented as follows:

Table 1: *Mathematics Performance of Selected Grade 7 Students*

Mean	sd	Descriptive Rating
81.33	4.263	Satisfactory

Descriptors: 90-100 Outstanding, 85-89 Very Satisfactory, 80-84 Satisfactory,
          75-79 Fairly Satisfactory, Below 75 Did Not Meet Expectations

There are 382 grade 7 students who participated in the study. It can be seen from Table 1 that the mean score of the selected grade 7 students is 81.33 and interpreted as satisfactory. It signifies that the selected grade 7 students' performance is approaching proficiency based on the DepEd Order No.31 s. 2012 for the levels of proficiency. Hence, the proficiency performance of grade 7 student's needs to be enhanced to support the adherence of the K-12 curriculum for the use of the spiral progression approach in ensuring the mastery of knowledge and skills for grade 7 students. It is also associated, with the study of Idowu (2016) that one of the factors is the teacher qualification and its method and approach in teaching mathematics contributed to the poor performance of the students. Furthermore, Also, Koshal, Koshal, and Gupta (2013) suggest that aside from increased investment in education there are also other socio-economic factors that need attention, like attendance to improve students' performance academically.

Table 2: *Descriptive Statistics for the Attitudes Towards Equity*

		Mean	sd	Verbal Interpretation
1	treat all students fairly.	1.38	.539	Strongly Agree
2	sensitive to the culture and tradition of the students	1.64	.533	Agree
3	respond to students' actions consistently	1.62	.582	Agree
4	respond to the needs of the student's	1.62	.539	Agree
5	prevent classroom situation that causes of losing peer respect among students	1.48	.506	Strongly Agree
	Overall average/ sd/ verbal interpretation of attitude toward equity	1.55	.419	Strongly Agree

Legend: 1- Strongly Agree, 2- Agree, 3- Disagree, 4- Strongly Disagree

The results show that among the five items, two have *Strongly Agree* are, treat all students fairly *and* prevent classroom situation that causes of losing peer respect among students. And three items having the same result as *Agree* which points to, sensitive to the culture and tradition of the students, then having the same Mean with*,* respond to students' actions consistently and followed by respond to the needs of the student's, which all appear to be the other prevailing attitude of the teacher-respondents.

Table 2 also shows a desirable result with the overall interpretation of mean of *Strongly Agree* which accords with the study of Tabuk as cited from the Journal of Education and Learning on teacher's attitude as one of the reasons affecting the mathematical achievement of the students. The same with the work of King (2017), which points to the effectiveness of

the teacher's attitude rather than the behaviour. Likewise, the study of Yavuz, Demirtasli, Yalcin, and Dibek (2017), Ganal and Guiab (2014) that the positive attitude of the teacher significantly affects the student's achievement.

Table 3: *Descriptive Statistics for the Attitudes Towards Classroom Management*

		Mean	sd	Verbal Interpretation
1	stimulate the development of self-discipline	1.48	.506	Strongly Agree
2	manage the classroom in ways to improve active learning	1.71	.554	Agree
3	organize classroom to prevent misbehavior	1.57	.501	Agree
4	use strategies like proximity and space, as well as movement to engage students attention	1.62	.492	Agree
5	establish routines for classroom management.	1.60	.497	Agree
	Overall average/ sd/ verbal interpretation of attitude toward classroom management	1.60	.404	Agree

Legend: 1- Strongly Agree, 2- Agree, 3- Disagree, 4- Strongly Disagree

As seen from table 3, it summarizes the overall interpretation in terms of descriptive statistics for the attitudes towards classroom management as *Agree* with only one item rated as *Strongly Agree* in the aspect of stimulate the development of self-discipline, among other five items. This connected to what King (2017,) emphasized from the two key factors from the developed instrument, the Positive Relationships and the Classroom Environment the critical role of the teacher in setting a positive classroom environment as a learning stimulus about classroom management.

Table 4: *Descriptive Statistics for Proficiency Level in Teaching Mathematics*

		Mean	sd	Verbal Interpretation
1	Sets (operations and relations)	1.98	.563	Proficient
2	Real Numbers: Operations on Integers and Rational Numbers	1.93	.558	Proficient
3	Subsets of the Real Numbers, Scientific Notation	2.05	.623	Proficient
4	Measurement: converts from one unit to another both Metric and English system	2.14	.608	Proficient
5	Fundamental Algebra: Translating and evaluating an algebraic expression, Algebraic Expression, and Polynomials	1.86	.647	Proficient
6	Fundamental Algebra: Operations on Polynomials	1.81	.634	Proficient
7	Linear Equations and Inequalities in one variable: Solving Equations and Inequalities	1.93	.601	Proficient
8	8. Basic geometrical concepts and property, angles (pairs), parallel lines and transversals	1.95	.661	Proficient
9	Relations in Geometry: relations involving segments and angles, triangles (angle and sides), quadrilaterals, polygons, and circle	2.05	.661	Proficient
10	Statistics: collecting, organizing of data, measures of variability and the central tendency for the group and ungroup data	1.93	.558	Proficient
	Overall average/ sd/ verbal interpretation of proficiency in teaching Mathematics	1.96	.508	Proficient

Legend: 1- Exemplary, 2- Proficient, 3- Approaching Proficient, 4- Developing

Table 4 illustrates the overall level of the teacher-respondents' proficiency in teaching Mathematics with 1.96 mean scores interpreted as *Proficient*, less one step closer to Exemplary. Consequently, the study of Lester (2013), citing several other researchers, and Foster (2010) underscore the importance of teacher's knowledge and proficiencies specifically to the mathematical and pedagogical knowledge as tools to improve the student's academic performance. This is also implied from the study of Sogillo et al. (2016), in evaluating the secondary mathematics teachers, showed proficient in all seven (7) learning domains but significantly different when students' performance was also evaluated in different schools.

Table 5: *Descriptive Statistics for Instructional Materials as Instructional Practices use in Teaching Mathematics*

		Mean	sd	Verbal Interpretation
1	Manipulative (e.g., geometric solids, algebra tiles, etc.)	2.29	.508	Often
2	Textbook and Module	1.74	.767	Often
3	Teacher's guide	1.98	.869	Often
4	Printed Worksheets / Activities	1.81	.634	Often
5	Calculators	2.60	.767	Rarely
6	PPT / PowerPoint Templates	2.31	.897	Often
7	Computer: Web base resources (other than worksheets) / Online Activities	2.67	.817	Rarely
8	Downloadable videos	2.64	.692	Rarely
9	Mathematical Tools (other than calculators), e.g., protractor, meter stick, etc.	1.93	.677	Often
10	Mathematics Apps/Software: e.g., GeoGebra, Desmos, etc.	2.86	.814	Rarely
	Overall average/ sd/ verbal interpretation of instruction materials	2.28	.474	Often

Legend: 1- Always, 2- Often, 3- Rarely, 4- Never

On the average scale, table 5 for instructional materials used in teaching mathematics results show an overall average of 2.28 with the verbal interpretation of Often. These in terms of Manipulative (e.g. geometric solids, algebra tiles, etc.) with mean of 2.29, Textbook and Module with mean of 1.74, Teacher's guide with mean of 1.98, Printed Worksheets/ Activities with mean of 1.81, PPT/ Powerpoint Templates with mean of 2.31 and Mathematics Apps/Software e.g. GeoGebra, Desmos with mean of 2.89. However, Rarely used are calculators, computer: web-based resources (other than worksheets) / online activities downloadable videos and mathematics apps/software. These relate to the study of Mouza and Lavigne (2012), Hoge (2016), Mercado (2017), Bonifacio (2013) about the importance of using technology- aided learning materials as interventions or as means to enhance classroom interaction to motivate the students to produce the desired output, especially in mathematics. This suggests that, Leinward et al., (2014), the effective mathematics teaching practices are; entrenched mathematics aims to focus on learning, provide exercises that can improve and develop reasoning and problem solving, expedite purposeful mathematical discourse, pose important questions, build fluency methods from the conceptual understanding, strengthen beneficial to struggle in learning mathematics, and evoke and make use evidence of student thinking. Also, to Cope (2015), in teaching mathematics involves presenting the curriculum through multiple representations to model math concepts.

Table 6: *Descriptive Statistics for Teaching Strategies in Active Learning*

		Mean	sd	Verbal Interpretation
1	require the students at least a week to complete their projects	2.21	.750	Often
2	allow students to use ICT in doing assignment and classwork activity	2.74	.767	Rarely

		Mean	sd	Verbal Interpretation
3	let the students figure out their own or individual progress	1.93	.712	Often
4	facilitate in helping the students to work collaboratively and have a joint solution on the specific problem	1.83	.621	Often
5	give students time to make a reflection, e.g., Math Journal	2.10	.726	Often
	Overall average/ sd/ verbal interpretation of active learning	2.16	.478	Often

Legend: 1- Always, 2- Often, 3- Rarely, 4- Never

Table 6 representing the descriptive statistics for teaching strategies in Active Learning presents an overall mean of 2.16 as *Often* used by the teacher-respondents in their classroom activities. These correlate to the study developed by Le Donne, Fraser, and Bousquet (2016) stating the most common positive teaching strategies promoting positive learning. However, the interpretation result, *Rarely*, which appeared from the second item *allow students used to ICT in doing assignment and classwork activity,* would have an impact to their technological skills and literacy as one of the factors in the learning process as cited from the editorial of Contemporary Issues in Technology and Teachers Education Journal (2018), (Mouza and Lavigne, 2012), Mercado (2017), Aunzo (2017, Durmus and Karakirik (2018) citing Sudan and Higgins (1976), Dick and Hollebrands (2011), Tan (2015), Bonifacio (2013), Pantolla (2012) and Hoge (2016).

Table 7: *Descriptive Statistics for Teaching Strategies in Cognitive Activation*

		Mean	sd	Verbal Interpretation
1	expect students to expound their work on complex problems	2.29	.774	Often
2	motivate students to use their own or individual solutions in solving problems	1.91	.617	Often
3	work together in solving problems	1.69	.517	Often
4	connect mathematical concepts to practical applications and skills in daily living	1.91	.656	Often
5	encourage students to solve problems at home	2.02	.604	Often
	Overall average/ sd/ verbal interpretation of cognitive activation	1.96	.413	Often

Legend: 1- Always, 2- Often, 3- Rarely, 4- Never

Table 7 shows the result of mean average of 1.96 interpreted as *Often* based on cognitive activation under the teaching strategies with the same results in 5 items with the highest mean factor in work together in solving problems and expect students to expound their work on complex problems as having the lowest mean of 2.29. This aligns to the K to12 Basic Education Curriculum, specifically in grade 7 Mathematics' key concepts and principles, which is also stated in Republic Act No. 10533. The study of Le Donńe et al. (2016) thus confirms that strategies in teaching are related to students learning outcomes achievement in mathematics.

Table 8: *Descriptive Statistics for Teaching Strategies in Teacher-directed Instruction*

		Mean	sd	Verbal Interpretation
1	I set the learning goals clearly.	1.62	.539	Often
2	I provide time to my students to practice similar tasks	1.71	.508	Often
3	I provide immediate response when learners are working on specific tasks	1.79	.565	Often
4	I present the summary of the recently learn lesson and give an example from everyday life to demonstrate the uses of new knowledge.	1.86	.608	Often
5	I provide differentiated instructions to address individual differences.	2.12	.670	Often

Overall average/ sd/ verbal interpretation of teacher-directed instruction	1.82	.435	Often

Legend: 1- Always, 2- Often, 3- Rarely, 4- Never

Table 8 reflects the result in teaching strategies in teacher-directed instruction signifying an overall result of *Often* carrying the same mean results in each item. These highlight the teaching practices and learning goals of the teacher to support the flow of the lessons. It correlates to the study of Stanford (2001) that teaching strategy generates the desired results which inspire students' understanding. It also significantly relates to the study of Ismail et al. (2014). That effective teacher has a wide range of specific teaching strategies to use to make teacher's classroom teaching successful.

Table 9: *Correlation of Student-respondents Performance and Teacher-respondents Attitudes, Proficiency, Instructional Practices and Strategies in Teaching Grade 7 Mathematics*

		r	p-value	Degree of Relationship
1	Attitude towards Teaching Mathematics			
	1.1 Attitude Towards Equity	-.011	.946	Very Low Correlation
	1.2 Attitude Towards Classroom Management	-.183	.246	Very Low Correlation
2	Proficiency in Teaching Mathematics	-.047	.766	Very Low Correlation
3	Instructional Practices	.120	.448	Very Low Correlation
4	Strategies in Teaching Mathematics			
	4.1 Active Learning	.222	.157	Low Correlation
	4.2 Cognitive Activation	.110	.489	Very Low Correlation
	4.3 Teacher-Directed Instruction	.024	.878	Very Low Correlation

*. Correlation is significant at the 0.05 level (2-tailed)

Table 9 illustrates the degree of relationship of correlation in terms of student-respondents performance and teacher-respondents attitudes, proficiency, instructional practices, and strategies in teaching Grade 7 Mathematics with six (6) factors having Very Low Correlation and having only one in Active Learning having a Low Correlation. These reflect the bases of impact between the teacher teaching strategies and its relationship to students' performance.

The results are relative to the findings of Ismail et al. (2014) that contradict the relationship of teaching strategies to student's achievement relating to students having the weak foundation of basic Mathematics skills and lack of interest in learning the subject. Mateo (2011) as cited by Ganal and Guiab (2014) also concluded that teaching strategies are not correlated with mathematics achievement. Furthermore, insignificant result in the study of Sogillo et al. (2016) were found from selected teachers from both public and private schools who possessed high proficiency from their CBPAST, yet students from the public school performed low compared to students from the private school.

Table 10: *Conclusion about the Null Hypothesis from the Statistical Test*

		Hypothesis	p-value	Decision
H_0	1	The Attitude towards teaching mathematics had no significant relationships with the Performance of grade 7 students in Mathematics.	.511	Not Rejected
	2	The Proficiency in teaching mathematics had no significant relationships to the Performance of grade 7 students in Mathematics.	.766	Not Rejected

| 3 | The Instructional Practices of the teacher-respondents had no significant relationships to the Performance of grade 7 students in Mathematics. | .448 | Not Rejected |
| 4 | Strategies in teaching mathematics had no significant relationships with the Performance of grade 7 students in Mathematics. | .370 | Not Rejected |

*. Correlation is significant at the 0.05 level (2-tailed)

As shown from the result in Table 10 in conclusion about null hypothesis from the statistical test have *Not Rejected* the hypothesis of no significance to the following: the attitude of the teacher-respondents, the proficiency of the teacher-respondents, Instructional Practices and in Teaching Strategies of the teacher-respondents with the students' mathematics performance in grade 7.

This confirms the study of Haider and Hussain (2014), on investigating the relationships between teacher factors and students' performance in mathematics for which it showed a negative correlation between students' achievement and teacher-related factors, like designation, pedagogical method, assessment interval, and professional qualification.

IV – CONCLUSIONS

The succeeding conclusions were drawn based on the preceding findings and results of the study.
1. The Mathematics' performance of student-respondents in grade 7 is *Satisfactory* or Approaching Proficiency in terms of levels of proficiency.
2. The extent of agreement in the teacher's attitude towards their disposition about their equitable treatment to their students is *Strongly Agree*. The classroom management has an interpretation of *Agree* in the overall rating. It shows that the teacher-respondents have a strong concern towards their students.
3. While in the proficiency level of the teacher-respondents in teaching grade 7 Mathematics showed the same results of *Proficient* in ten (10) topics thus having the same *Proficient* result. In this manner, the teacher-respondents are equipped with the knowledge needed and competent enough to teach the grade 7 mathematics contents or the competencies programmed in the K-12 curriculum.
4. The teacher-respondents *Often* use the instructional materials in teaching grade 7 Mathematics like manipulative, textbooks and module, teacher's guide, printed worksheets, PowerPoint presentations, and mathematical tools (e.g., protractor, meter stick). And they are *Rarely* used of calculators, computer web-based resources, downloadable videos and Mathematics apps or software for their instructional practices in teaching grade 7 Mathematics. With these, the teacher-respondents make used of the availability of the teaching materials and innovative in some resources to make learning more concrete and visual to the students. At the same time needs to uplift technologically incline in terms of used technology in teaching Mathematics.
5. The study showed that the majority of the teacher-respondents *Often* used the most common teaching strategies that promote a positive outcome in learning Mathematics suchlike, Active Learning, Cognitive Activation, and Teacher-directed Instructions. Strategically teachers' imposed it in teaching grade 7 Mathematics that aligns with the K-12 Basic Education Curriculum which is stated in the Republic Act No. 10533. These teaching strategies highlighted the practices and goals of the teachers' to support the flow of the lessons interactively that generates the desired results to make teaching successful and effective.
6. The null hypothesis that there are no significant relationships between the teacher-respondents, Attitude, Proficiency, Instructional Practices, and Teaching Strategies towards the performance of grade 7 students in Mathematics is not rejected. Thus it negates the significant correlations based on variability to the student's performance in Mathematics. Conclusively, the low academic performance of grade 7 students in Mathematics cannot be attributed to the teachers' factors.

V - IMPLICATIONS TO MATHEMATICS TEACHING AND LEARNING

The rectify on Mathematics education has recognized the importance of addressing effectively current issues in connection to the totality of teaching and learning process, by emphasizing the learner-centered curriculum to uplift the student's academic performance specifically in Mathematics.

On the average performance among students, it is still a great challenge on the part of the school and mathematics department and the teachers to look for the best teaching method or strategies to cater especially the low performing students or those having difficulties in learning mathematics. To learn and to master the basic concepts and skills in connection to real-world situations. It is also on the part of the teacher to help students with a language barrier to understand math.

In some uncertainty factors that exist in the environment, there is also a significant factor in raising the achievement of the students that reflect his performance. Indeed, from Educational Research Centre in St. Patrick's College, Dublin, cited OECD (2016), Burge and Sizmur (2015), Perkins and Shiel (2016), relate to the following strategies that have been identified in engaging the low achievement in mathematics.

1. Implement a policy of early diagnosis and intervention for low achieving students.
2. Addressing the lower achievement in mathematics and provide a plan accordingly.
3. Setting high expectations for all students by relating the topics to the student's life.
4. Rising the students' cognitive engagement in mathematics and
5. provide opportunities for low achievement students to solve more complex problems.
6. Ensuring the learning environment is conducive to learn math.
7. Ensuring the opportunity of the students' to discuss with their peers and reflects on their learning progress.
8. Provide extra support to help students who needed it most.
9. Provide appropriate feedback to raise the confidence and mathematical self-concept of low achieving students.
10. Ensuring the students have an opportunity to use ICT's in mathematics classes to support students learning achievement not only the necessary procedures but also into a higher-level process of skills and exploration of mathematical ideas, and development across a range of areas.
11. Maintain a balance and suitable interplay between traditional approaches and technology-based of instructions and activities in mathematics teaching and learning.

Hamzeh (2014) suggests training on mathematics teachers in the teaching strategies and teaching materials in the classroom that meet the criteria expected to have a better impact than traditional learning. Likewise, an optimistic or pessimistic attitude in mathematics is essential to educators as they would affect the level of instruction that will extend to their students. Guler (2014) also reiterates the need to focus on developing tools for assessing teachers' knowledge in teaching algebra.

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