MATHEMATICS TEACHING PRACTICES ON THE MATHEMATICAL PROFICIENCY OF JUNIOR HIGH SCHOOL STUDENTS

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Abstract

The study focuses on the study investigating the relationship between the mathematics teaching practices and junior high school students' mathematical proficiency in Mary Help of Christians College, Canlubang.

Specifically, it sought to answer the following questions: (1) What is the level of mathematics teaching practices of teachers in terms of establishing mathematical goals, making thinking visible, building procedural fluency from conceptual understanding, use, and connecting mathematical representation, elicit, and use evidence of students' thinking and support productive struggle? (2) what is the level of mathematical proficiency of junior high school students in terms of conceptual understanding, procedural fluency, strategic competence, adaptive reasoning, and productive disposition? And (3) Is there a significant relationship between the mathematics teaching practices on the mathematical proficiency of Junior High School Students?

The descriptive research approach was used, which entailed gathering the essential data and information to test the hypothesis and answer study-related questions. The researcher utilized a self-made Five-Likert scale questionnaire to obtain data from study participants. The questionnaire was given to research participants via an online survey. The study's respondents were comprised of 162 students from Grade 7 to Grade 10. Pearson R Correlation, Weighted Mean, and Standard Deviation were used to analyze the data.

Based on the study's findings, the mathematics teaching practices are very highly implemented and evident as perceived by the students-participant, and the junior high school students are proficient in mathematics. Alongside, there is a moderately significant relationship between the mathematics teaching practices of the teacher and the mathematics proficiency of junior high school students.
The study recommends that the conclusions generative be investigated. With the given result, it is recommended to conduct a similar study, but instead of a survey questionnaire to assess the junior high school student's mathematical proficiency, the future researcher can use an exam questionnaire.

Keywords: Junior High School, Mathematics Teacher, Mathematical Proficiency, and Mathematics Teaching Practices

1. Main Text

Introduction

Evolution in Mathematics is similar as the years go by. The foundation of knowledge is still critical; it goes without saying that anyone with a firm understanding of concepts, methods, definitions, and ideas struggles in Mathematics. However, mathematical ability is much more than the ability to re-create conventional information on demand. There were disagreements regarding what success in Mathematics meant; some educators and curriculum developers believe that abilities are required and emphasize students' learning procedures.

Mathematically proficient people exhibit certain behaviors and dispositions while "doing Mathematics." The National Council of Teachers of Mathematics (NCTM) describes mathematical proficiency with five interconnected strands: (a) conceptual understanding, (b) procedural fluency, (c) strategic competence, (d) adaptive reasoning, and (e) productive disposition. The quality of learning opportunities for learners impacts learning outcomes. Moreover, mathematical proficiency is essential as a goal that must be nurtured in the mathematics classroom aside from the student's mathematical performance. One of the factors to consider in nurturing mathematics in the classroom is teachers' teaching practices in promoting mathematical proficiency. The teacher's quality determines the variation in students' learning achievement, and quality teaching matters for successful students. The teacher has a significant role in developing students' mathematical proficiency. Alongside the teacher's mathematical content knowledge, the teaching practices used by the teachers also affect the student's mathematical proficiency.

The National Council of Teachers of Mathematics (NCTM) introduces the eight effective teaching practices. The researcher concise the eight practices of mathematical teaching practice into six, namely; (a) establish mathematical goals; (b) make thinking visible (implement tasks that promote reasoning and problem solving, facilitate meaningful discourse and pose a purposeful question); (c) build procedural fluency from conceptual understanding; (d) use and connect mathematical representation; (e) elicit and use evidence of students' thinking and (f) support the productive struggle.

The above discussion explains the need to promote and develop the students' mathematical proficiency aside from mathematical performance. Henceforth, the researcher seeks to determine students' mathematical proficiency and how the stated factors above affect the students' mathematical proficiency.

Background of the Study

COVID -19 is a challenge to the different sectors of society, especially in education systems throughout the world, forcing nearly all schools, early childhood education and care centers, universities, and colleges. To lessen the spread of COVID-19, most governments temporarily opted to close educational institutions. As the academic year 2020 – 2021 ended, the secretary of the Department of Education declared that the education system won against the pandemic. However, in the current academic year, the Philippines is one of two countries that have not resumed face-to-face classes. Problems and worries about students' performance arise as the Philippines continues to have online and modular lessons. The petition on the academic break is on the left and right. There are reports and news about the new set-up of learning during the pandemic; students are having problems learning their lessons on their own—or worst, the ones who finish their modules are their parents.

One international standard assessment that determines the quality of mathematical proficiency in the Philippines is the Program International Student Assessment (PISA). PISA is a project of the Organization of Economic Corporation (COED) countries and the United Nations Educational Scientific and Cultural Organization (UNESCO). During PISA 2018, Filipino students' Philippines scores for Mathematics and science were likewise poor, with 353 and 357 points. This poor mathematical performance is attributed to a lack of mathematical proficiency, in which processes and methods are imparted apart from conceptual understanding. The quality of learning opportunities for learners impacts learning outcomes. Hollins, Luna, and Lopez (2014) stated that teacher preparation is critical because it determines teaching competency, affecting students' learning opportunities.

The teacher's teaching practices impact the most learning outcomes of the students. The National Council of Teachers of Mathematics (NCTM) introduces Principles to Actions: Ensuring Mathematical Success for All. The Principles of Actions devote the largest section to Teaching and Learning, and in the first Guiding Principles, the eight Mathematics Teaching Practices are described and illustrated. Proper use of mathematics depends on the student's working with math tools and ideas, thinking about them, and working with them. A teacher helps students acquire mathematical proficiency to identify, analyze, and develop math practices. Mathematical education can be seen as another way of assembling important aspects of proficiency strands. On the other hand, the practice is often not systematically cultivated in schools. However, math can be picked up by students at home or other offsite locations at school.

Furthermore, the Department of Education announced that the Philippines would participate in PISA 2022 to improve its ranking. The question is, can the education system in the Philippines improve its ranking? What will students' performance be in the new normal when distance learning is implemented, given that their performance is low even in the face-to-face modality? With the above discussion, the researcher sought to assess Mathematics teaching practices on the Mathematical Proficiency of a junior high school student.

Theoretical Framework

According to Fox (1983), teachers have a theory about their teaching and learning process. Fox developed the four personal learning theories (transfer theory, shaping theory, traveling theory, and growing theory); each of the theories includes the relationship between a teacher's personal theory of what is teaching, what is learning, and instructional practices. This study is anchored on the Travelling and Growing Theories under Fox's Personal Learning Theory. According to Jones (2017), traveling theory includes a focus on the subject being taught, and teachers that teach with this framework have knowledge of their subject matter and different approaches to assist students in order to acquire knowledge. It supports the mathematics teaching practices where the teacher is aware that the teaching and learning process is changing, with that teacher are open to learn new approaches and practices to help the students to acquire the desired information. The practices of establishing mathematical goals, build procedural fluency from conceptual understanding, make thinking visible, use and connect mathematical representation, elicit and use of students' thinking are under travel theory. On the other hand, for growing theory, the teacher is concerned about what is happening to the students during the learning process, such as what and whom the learner is becoming as a person as they acquire new knowledge (Fox, 1983 in Jones, 2017). It supported the last mathematics teaching practice, which is to support productive struggle. Where the environment of the teaching-learning process affects the student in becoming what they are, having support from the teacher, students may have a positive perspective outcome.

This study is also anchored on behaviorism theory. Behaviorism theory is mainly applied in a classroom, where it is certainly be seen and observed in terms of the characteristics of the teaching model or practices (Sokip et al., 2019). By carefully shaping the desirable behavior and information learned, the student will acquire and remember responses that will lead to a satisfying effect. Repetition of a meaningful connection results in learning, and if the students are ready for that connection, then the learning is enhanced (Baulo and Nabua, 2019, Zhou and Brown, 2015). With this, the mathematics teaching practices are implemented by the teacher, and with continuous implementation, the students are conditioned on the practices of the teacher that helps the students to easily acquire the desired target knowledge.

In addition, learners can be more mathematically proficient in representing and connecting knowledge, which is the key to understanding the concept and solving problems. Piaget's Theory of Cognitive Development explains that adults do not grasp new ideas or knowledge simultaneously. Piaget believes that everyone's ability evolves. There are two processes in Piaget's cognitive theory: assimilation and accommodation. Assimilation directly incorporates new concepts into a student's schema; the new idea adds to the schemas by expanding previous ideas. Accommodation is when a new idea is substantially distinct from the existing schemas, the student must reorganize/restructure their current schemas. It is important to remember that assimilation and accommodation leave the previous knowledge intact and not erased (Moodley 2008).

Thus, the strand-conceptual understanding plays a significant role in the student's mathematical proficiency. It is the most important of all strands because, without proper knowledge, the interconnection to the other strands will be flawed, resulting in misconceptions and mathematical errors. For the five strands of mathematical proficiency to be valid or effective, they must be interwoven. Hence, a depth understanding is required to connect pieces of knowledge, and this connection is essential whether the learners can use what they know in solving problems. (Kilpatrick et al., 2001), as cited by Moodley (2008). The preceding statement supports the strands: strategic competence and adaptive reasoning. The Cognitive Theories of Motivation assume that behavior results from a cognitive process. The theories above support the learners' different cognitive changes to be proficient in mathematics. These theories presume that everyone interprets data and decides not because of the basic needs and drives. Moreover, the said theory supports the last strand of mathematical proficiency: productive disposition. According to Hlaing and Thein (2020), these five strands provide a framework for discussing the knowledge, skills, abilities, and beliefs that constitute mathematical proficiency, enabling students to cope with mathematical challenges.

This study is anchored on the theories mentioned above since it also deals with the studies teaching practices and mathematical proficiency, which may serve as the basis for research.

This study is premised on determining the relationship between mathematics teaching practices and the mathematical proficiency of junior high school students.

To give a better view of the research problem, it is presented in diagram form.

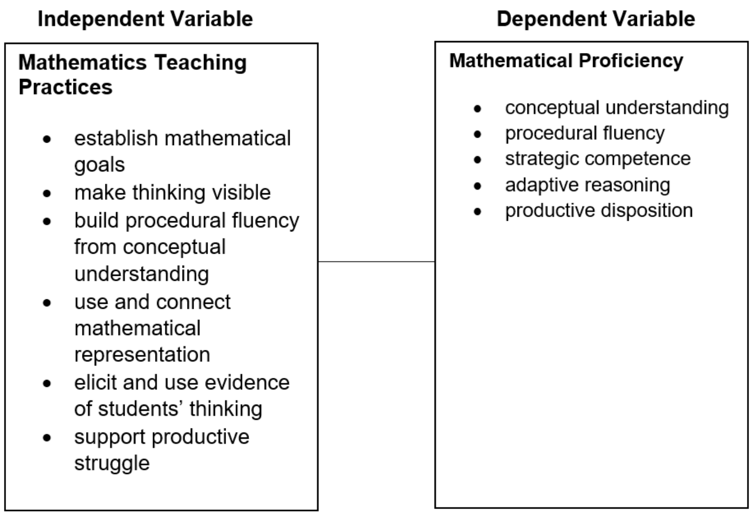

Figure 1. Research Paradigm of the Study

Figure 1 reflects the conceptual model of the study that shows the independent variable, which consists of the mathematics teaching practices such as establish mathematical goals, make thinking visible, build procedural fluency from conceptual understanding, use and connect mathematical representation, elicit and use evidence of students' thinking, and support productive struggle. On the other hand, the dependent variable is concerned with mathematical proficiency in terms of conceptual understanding, procedural fluency, strategic competence, adaptive reasoning, and productive disposition.

Statement of the Problem

This study aims to determine the effects of mathematics teaching practices on mathematical proficiency in junior high school. Specifically, it sought to answer the following:

1. What is the level of mathematics teaching practices of teachers in terms of:

1.1 establish mathematical goals/objectives
1.2 make thinking visible
1.3 build procedural fluency from conceptual understanding
1.4 use and connect mathematical representation
1.5 elicit and use evidence of students' thinking
1.6 support productive struggle?

2. What is the level of mathematical proficiency of Junior High Schools Students in terms of:
   2.1 conceptual understanding
   2.2 procedural fluency
   2.3 strategic competence
   2.4 adaptive reasoning
   2.5 productive disposition
3. Is there a significant relationship between the mathematics teaching practices and mathematical proficiency of Junior High School Students?

Research Methodology

The research design used in this study was the descriptive design research in this study to gather the necessary data for the variables of this study which are mathematics teaching practices and mathematical proficiency. Specifically, what is the relationship between mathematics teaching practices on the mathematical proficiency of junior high school students?

According to Shona McCombes (2019), descriptive research aims to describe a population, situation, or phenomenon accurately and systematically. It can answer what, where, when, and how questions, but not why. A descriptive research design can use various research methods to investigate one or more variables. Descriptive research design is a scientific method that includes observing and describing people's behavior without affecting it. The descriptive research design's main purpose is to describe population, situation, and phenomenon characteristics accurately and systematically. In the descriptive research design, the investigator does not control variables like in the experimental research design.

The respondents of the study were Junior High School Students (from Grade 7 to Grade 10) of Mary Help of Christians College – Salesian Sisters, Inc., a private institution located at Barangay Canlubang, Calamba City, Laguna. The sample size is composed of forty-three (43) Grade 7 students, thirty-eight (38) Grade 8 students, thirty-two (32) Grade 9 students, and forty-nine (49) Grade 10 students for a total of one hundred sixty-two (162) students who are half of the total students' population of junior high school students of Mary Help of Christians Collge – Salesian Sisters, Inc.

The instrument used in this study was a survey questionnaire checklist. The questionnaire was a research-made instrument devised to determine the relationship between the mathematics teaching practices and mathematical proficiency of junior high school students.

In the construction of the questionnaire described above, an extensive review of various books, publications, and internet sites was used. An initial draft of the research tool was prepared and presented to professors and panel members for comments and suggestions. Validation was done to assess the representation of the items with those of others dealing with the same area of investigation. The assistance of the adviser was relevant to the contents of the questionnaire that was solicited.

The researcher sought permission from the School Principal to gather the needed data through a letter of request for this study. Upon approval, a meeting was set to orient the respondents before the actual administration of the questionnaire in order to orient them relative to the purpose of the study. The respondents were oriented on how to accomplish the entire set of survey questionnaires.

The distribution and retrieval of questionnaires were administered personally by the researcher. The researcher explained fully the direction as well as the purpose of the study before allowing the respondents to answer the questionnaires.

Later, the data gathered was given appropriate statistical treatment, analyzed, and interpreted.

The responses were tabulated as the basis for the statistical treatment of the data. It was done in order to determine the relationship between the mathematics teaching practices and the mathematical proficiency of junior high school students. Confidentiality of information was assured to the respondents.

In order to determine the mathematics teaching practices of the teacher, the students used the following categories:

Point	Range	Remark	Verbal Interpretation
5	4.21-5.00	Always	Very High Implemented
4	3.41-4.20	Very Often	High Implemented
3	2.61-3.40	Sometimes	Moderately High Implemented
2	1.81-2.60	Rarely	Low Implemented
1	1.00-1.80	Never	Very Low Implemented

In order to determine the mathematical proficiency, the students used the following categories

Point	Range	Remark	Verbal Interpretation
5	4.21-5.00	Strongly Agree	Advance
4	3.41-4.20	Agree	Proficient
3	2.61-3.40	Neutral	Approaching Proficiency
2	1.81-2.60	Disagree	Developing
1	1.00-1.80	Strongly Disagree	Beginning

The researcher used the mean and standard deviation to determine the level of mathematics teaching practices and mathematical proficiency. On the other hand, the researcher used Pearson R correlation to determine the relationship between mathematical teaching practices and mathematical proficiency of junior high school students. And to interpret the computed r-value, the Guilford Rule of Thumb was used.

Result and Discussion

Table 1. Mathematics Teaching Practices of Teachers in terms of Establishing Mathematical Goals

Statement *My teacher …*	**Mean**	**Standard Deviation**	**Remarks**
connects the mathematics goals to prior learning standards and practices	4.39	0.790	Always
teaches us to use established mathematical goals for self-assessment	4.40	0.767	Always
makes the mathematical goals specific	4.31	0.880	Always
makes the mathematical goals measurable by giving drills and assessments that we can easily answer	4.32	0.889	Always
provide attainable mathematical goals by providing notes and external resources during the discussion	4.48	0.805	Always
makes the mathematical goals relevant by applying trending topics or situations in our discussion	4.13	0.992	Very Often
makes the mathematical goals by time-bounded by providing enough time for us to meet the objectives	4.31	0.888	Always
makes the learning goals visible to the learners	4.38	0.819	Always
empowers us to focus on what we need to learn	4.41	0.854	Always
refers to the mathematical goal of the lesson during the discussion to ensure our understanding	4.45	0.740	Always

Overall Mean= 4.36
Standard Deviation= 0.675
Verbal Interpretation= VHI

Rating	Scale	Remarks	Verbal Interpretation
5	4.21-5.00	Always	Very High Implemented (VHI)
4	3.41-4.20	Very Often	High Implemented (HI)
3	2.61-3.40	Sometimes	Moderate High Implemented (MHI)
2	1.81-2.60	Rarely	Low Implemented (LI)
1	1.00-1.80	Never	Very Low Implemented (VLI)

Table 1 reveals the level of frequency of mathematics teaching practices in terms of establishing mathematical goals. The table shows that the teacher refers to the mathematical goal of the lesson during the discussion to ensure our understanding with a mean and standard deviation of 4.40 and 0.740, respectively. On the other hand, the teacher makes the mathematical goals relevant by applying trending topics or situations in our discussion and receives the lowest mean scores from a respondent with 4.13 and a standard deviation of 0.992. However, the teacher provides attainable mathematical goals by providing notes and external resources during the discussion, with the highest mean score from the students with 4.48, with a standard deviation of 0.805.

It can be gleaned from Table 1 above that the level of frequency of Mathematics Teaching Practices of the Teacher in terms of Established Mathematical Goals has a mean of 4.36, with "Always" as a remark. In this context, based on the students' perception, students identify that their teacher-established mathematical goal is "Very High Implemented" and evident in the teaching and learning process.

Establishing the objectives is not enough to ensure the students' learning; the teacher should choose the right strategies for the set goals. (Shi, 2018). The notion is that teachers should recognize different learning goals for the student to build new knowledge on their prior knowledge, and the teacher should also orchestrate the discussion where the teacher can provide opportunities that are in line with the learning goals (Kim and Yeo, 2019). On the other hand, it is true that students learn best when they are self-regulated as the objectives are set, but other educational studies show that students are still passive consumers of information.

Table 2. Mathematics Teaching Practices of Teachers in terms of Making Thinking Visible

Statement *My teacher …*	**Mean**	**Standard Deviation**	**Remarks**
selects activities carefully to motivate us, builds new knowledge, and presents tasks that require a high level of cognitive demand	4.32	0.839	Always
gives activities that provide opportunities for us to engage in high-level thinking	4.50	0.690	Always
delivers activities that build on the extent of our current mathematical understanding and support us in exploring the tasks without taking over our thinking	4.31	0.807	Always
encourages us to use varied approaches and strategies to understand and solve the tasks.	4.46	0.757	Always
engages us in a purposeful sharing of mathematical ideas, reasoning, approaches, and strategies	4.37	0.862	Always
selects and arranges our approaches and solutions for whole-class analysis and discussion	4.35	0.830	Always
ensures the progress toward goals by providing explicit connections to our approaches, strategies, and reasoning	4.36	0.825	Always
makes a certain question that goes beyond gathering information to probe thinking and requires explanation and justification, and provides sufficient wait time for us to formulate responses	4.34	0.835	Always
asks intentional questions that make mathematics more visible and accessible for student discussion	4.32	0.861	Always
uses to engage in assessment conversation question	4.34	0.814	Always

Overall Mean= 4.37
Standard Deviation= 0.675
Verbal Interpretation= VHI

Rating	**Scale**	**Remarks**	**Verbal Interpretation**
5	4.21-5.00	Always	Very High Implemented (VHI)
4	3.41-4.20	Very Often	High Implemented (HI)
3	2.61-3.40	Sometimes	Moderate High Implemented (MHI)
2	1.81-2.60	Rarely	Low Implemented (LI)
1	1.00-1.80	Never	Very Low Implemented (VLI)

Table 2 reveals the mathematics teaching practices for making thinking visible. It shows that the students see that the teacher gives activities that provide opportunities for us to engage in high-level thinking and receives the highest mean scores from the students with 4.50 and a standard deviation of 0.690. It also shows that the teacher delivers activities that build on the extent of our current mathematical understanding and support us in exploring the tasks without taking over our thinking, receives the lowest mean scores from the student with 4.31 and a standard deviation of 0.807. On the other hand, the teacher encourages students to use varied approaches and strategies to understand and solve the tasks has a mean and standard deviation of 4.46 and 0.757, respectively, receives the second highest mean score from the students.

Table 2 reveals the level of frequency of Mathematics Teaching Practices of the Teacher in terms of Make Thinking Visible with a mean of 4.37 and a remark of "Always." Based on students' perception, students identify that the mathematics teaching practice of making thinking visible is "Very Highly Implemented" it is very evident

According to the findings of a study conducted by Eduafo (2014), if the teacher effectively implements tasks that are highly cognitively demanding, it can make the students perform better across all of Bloom's taxonomy of cognitive levels of learning domains. Insorio and Librada (2021) added that using another mechanism in implementing tasks enhances the students' critical thinking and problem-solving skills. However, to improve students' mathematical understanding, the teacher must begin with the beliefs about mathematical discourse and the instruction and the beliefs of what mathematics is (Shortino-Buck, 2017).

Table 3. Level of Frequency of Mathematics Teaching Practices of Teacher in terms of Building Procedural Fluency from Conceptual Understanding.

Statement *My teacher …*	**Mean**	**Standard Deviation**	**Remarks**
relates new conceptual knowledge to the previous concept in a meaningful manner	4.43	0.738	Always
enables us to explain basic mathematical concepts	4.41	0.793	Always

encourages us to define the concept in a correct mathematical language	4.61	0.698	Always
highlights the importance of the mathematical concept and how to use it correctly	4.49	0.707	Always
directs us to determine hypotheses and the necessary values in mathematical problem	4.45	0.789	Always
presents open-ended life problems that can be solved in different ways that provide opportunities for us to use our own reasoning strategies and methods in solving problems	4.40	0.760	Always
guides us to the method of determining necessarily suitable strategies to effectively solve problems	4.39	0.766	Always
asks us to discuss and explain how the procedures work in solving the problem and urges us to justify our solution method.	4.41	0.769	Always
asks us to explain the concept in connection with the solution and guides us to assess our solutions	4.36	0.817	Always
connects student-generated strategies and methods to more appropriate and efficient procedures	4.49	0.716	Always

Overall Mean= 4.45
Standard Deviation= 0.0609
Verbal Interpretation= VHI

Rating	Scale	Remarks	Verbal Interpretation
5	4.21-5.00	Always	Very High Implemented (VHI)
4	3.41-4.20	Very Often	High Implemented (HI)
3	2.61-3.40	Sometimes	Moderate High Implemented (MHI)
2	1.81-2.60	Rarely	Low Implemented (LI)
1	1.00-1.80	Never	Very Low Implemented (VLI)

Table 3 reveals the Levels of the Mathematics Teaching Practices of Teachers in terms of Building Procedural Fluency from Conceptual Understanding. The table shows that the teacher relates the new conceptual knowledge to the previous concept in a meaningful manner with a mean and standard deviation of 4.43 and 0.738, respectively. Table 2 also reveals that the teacher presents open-ended life problems that can be solved in different ways that provide opportunities for the students to use their own reasoning strategies and methods in solving problems, with a mean and standard deviation of 4.40 and 0.760, respectively.

It can be gleaned from Table 3 that the Mathematics Teaching Practices of Teachers in terms of Building Procedural Fluency from Conceptual Understanding are 4.45 with the remark of "Always." In this context, students agree that the practice of building procedural fluency from conceptual understanding is "Very High Implemented."

The result is supported by the result of the study by Manandar (2022), that there is a moderate positive correlation (r=0.559) between the procedural and conceptual knowledge of the respondents and a positive dependency of conceptual knowledge on procedural knowledge as per the regression model; it thus that students are good at procedural knowledge, but the conceptual knowledge is dependent upon procedural knowledge.

And Nance (2018) added that for the teacher to be able to build procedural fluency from conceptual understanding, the teacher should improve their content knowledge through professional development opportunities that focus on mathematical practices that will soon reflect on the teachers teaching instructions.

Table 4. Level of Frequency of Mathematics Teaching Practices of Teachers in terms of Using and Connect Mathematics Representation

Statement *My teacher …*	**Mean**	**Standard Deviation**	**Remarks**
introduces different forms of representations and guides us in presenting mathematical problems in several ways	4.41	0.785	Always
uses the representation to illuminate certain mathematical concepts involved in a procedure	4.44	0.764	Always
employs appropriate language and notation when using representation	4.44	0.755	Always
unpacks mathematical rules and operations through careful use of representation	4.49	0.733	Always
selects a representation that leads us to explain the mathematical procedure	4.30	0.803	Always
identifies similarities and differences between representation	4.30	0.878	Always
uses the representation to the held student to move to a more abstract level of thinking	4.45	0.773	Always
uses multiple representations to help us make sense of the underlying meaning of the mathematical procedure	4.23	0.853	Always

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uses representations to surface our misconceptions and emphasize important mathematical ideas	4.32	0.839	Always
focuses on presenting and modeling math concepts to develop conceptual understanding	4.30	0.820	Always

Overall Mean= 4.37
Standard Deviation= 0.625
Verbal Interpretation= VHI

Rating	Scale	Remarks	Verbal Interpretation
5	4.21-5.00	Always	Very High Implemented (VHI)
4	3.41-4.20	Very Often	High Implemented (HI)
3	2.61-3.40	Sometimes	Moderate High Implemented (MHI)
2	1.81-2.60	Rarely	Low Implemented (LI)
1	1.00-1.80	Never	Very Low Implemented (VLI)

Table 4 reveals the Level of frequency of Mathematics Teaching Practices of Teachers in terms of Using and Connecting Mathematics Representation. The table shows that the teacher unpacks mathematical rules and operations through careful use of representation. It has the highest means scores among the respondents, with 4.49 and a standard deviation of 0.733.

The table also shows that the teacher uses the representation of the held student to move to a more abstract level of thinking, with a mean and standard deviation of 4.45 and 0.773. On the other hand, the table also reveals that the use of multiple representations to help us make sense of the underlying meaning of the mathematical procedure receives the lowest mean scores from the students, with 4.23 and a standard deviation of 0.853. It can be gleaned from Table 4 that the Mathematics Teaching Practices of Teachers in terms of Using and Connect Mathematics Representation are 4.37 with the remark of "Always." In this context, students agree that the practice of using and connect mathematics representation is a teacher "Very Highly Implement."

In accordance with the study of Akkuş (2004), the use of representations can encourage the students to think more deeply about mathematical concepts and intrinsically motivate them to learn more. In addition, students appreciate more the nature of mathematics by getting rid of the concept of memorization and avoiding the overemphasizing of the mathematical algorithms and rules. Samsuddin and Retnawati (2018) also added that there are challenges in using representation in mathematical learning. One of these is the student's perception, where representation and mathematical concepts are two different entities; the other challenge is where the teacher as a learning facilitator sees the representation as a product of learning mathematics, not as a process of understanding mathematics.

Table 5. Level of Frequency of Mathematics Teaching Practices of Teachers in terms of Eliciting and Using Evidence of Student Thinking.

Statement *My teacher …*	**Mean**	**Standard Deviation**	**Remarks**
provides and identifies indicators of what is important to observe in our mathematical thinking	4.43	0.712	Always
recognizes what counts as evidence of our progress	4.33	0.810	Always
plans for ways to elicit information gathered from us	4.33	0.763	Always
draws old knowledge and misconception by activating our prior knowledge	4.33	0.796	Always
bring out students(our) thinking through academic dialogue	4.29	0.868	Always
generate evidence of our thinking through observation and analysis of our work	4.36	0.785	Always
elicit evidence of our learning through formative, peer, and self-assessment	4.36	0.793	Always
interprets what the evidence means concerning our learning	4.35	0.807	Always
makes an in-the-moment decision on how to respond to us with questions	4.48	0.758	Always
reflects on evidence of our learning for future instructional planning	4.41	0.727	Always

Overall Mean= 4.37
Standard Deviation= 0.630
Verbal Interpretation= VHI

Rating	Scale	Remarks	Verbal Interpretation
5	4.21-5.00	Always	Very High Implemented (VHI)
4	3.41-4.20	Very Often	High Implemented (HI)
3	2.61-3.40	Sometimes	Moderate High Implemented (MHI)
2	1.81-2.60	Rarely	Low Implemented (LI)
1	1.00-1.80	Never	Very Low Implemented (VLI)

Table 5 reveals the Levels of frequency of the Mathematics Teaching Practices of Teachers in terms of Eliciting and Using Evidence of Student Thinking. The table reveals that the teacher who makes an in-the-moment decision on how to respond to us with questions receives the highest mean scores from the students with 4.48 and a standard deviation of 0.758. the table also reveals that the teacher provides and identifies indicators of what is important to observe in our mathematical thinking with a mean and standard deviation of 4.43 and 0.712. On the other hand, the table also shows that the teacher who brings out students thinking through academic dialogue receives the lowest mean score of 4.29 and a standard deviation of 0.868.

It can be gleaned from Table 5 that the Mathematics Teaching Practices of Teachers in terms of Eliciting and Using Evidence of Students Thinking are 4.37 with a remark of "Always." In this context, students agree that the mathematics teaching practice of eliciting and using evidence of student thinking in the teaching and learning is "Very High Implemented."

According to the findings of a study conducted by Lee et al. (2021), eliciting is a high-leverage practice of a teacher that assess students' understanding and is necessary for avoiding assumption about the abilities of the students. They also mentioned that responding to and eliciting the student's thinking is difficult and multifaceted but can be developed through opportunities for practice at the same time and conclude that providing the teacher with education programs with insight and resources can promote the development of eliciting skills of the teacher where they can promote student discussion and learning.

Table 6. Level of Frequency of Mathematics Teaching Practices of Teachers in terms of Supporting Productive Struggle

My teacher ...	**Mean**	**Standard Deviation**	**Remarks**
encourages us to clearly speak out our thought	4.40	0.901	Always
gives questions that help us focus on our thinking and determine the source of our struggle	4.38	0.849	Always
requires us to provide expectations for problem solution	4.30	0.789	Always
boosts and appreciates our work to promote motivation	4.35	0.962	Always
secures a safe and friendly learning environment that encourages us to work anxiety-free	4.34	0.913	Always
provides activities that highlight and value the role of mathematics in life	4.44	0.739	Always
pays attention to our concerns and needs during lessons	4.44	0.899	Always
persuades us to reflect on our work	4.31	0.902	Always
imparts time and helps us manage our adversity by not stepping in too soon	4.39	0.858	Always
acknowledges that struggle is an important part of learning and doing mathematics	4.42	0.876	Always

Overall Mean= 4.38
Standard Deviation= 0.702
Verbal Interpretation= VHI

Rating	Scale	Remarks	Verbal Interpretation
5	4.21-5.00	Always	Very High Implemented (VHI)
4	3.41-4.20	Very Often	High Implemented (HI)
3	2.61-3.40	Sometimes	Moderate High Implemented (MHI)
2	1.81-2.60	Rarely	Low Implemented (LI)
1	1.00-1.80	Never	Very Low Implemented (VLI)

Table 6 on the next page reveals the Levels of frequency of the Mathematics Teaching Practices of Teachers in terms of Supporting Productive Struggle. The table reveals that the teacher who provides activities that highlight and value the role of mathematics in life and pays attention to students' concerns and needs during lessons has the highest mean score with 4.44 and standard deviation of 0.739 and 0.899, respectively. The table also reveals that the teacher acknowledges that struggle is an important part of learning, and doing mathematics has a mean of 4.42 and a standard deviation of 0.876. The table shows that the teacher secures a safe and friendly learning environment that encourages us to work anxiety-free with a mean of 4.34 and a standard deviation of 0.913. However, the table shows that the teacher who requires students to provide expectations for problem solutions receives the lowest mean score from the respondents, with a mean of 4.30 and a standard deviation of 0.789.

It can be gleaned from Table 6 that the Mathematics Teaching Practices of Teachers in terms of Supporting Productive Struggle are 4.37 with the remark of "Always." In this context, students agree that the mathematics teaching practice of supporting productive struggle in the teaching and learning process is "Very High Implemented." To support the result, students experience productive struggle throughout challenging mathematics tasks but then struggles a viewed as something essential for the intellectual growth of the students (Sayster and Makure, 2020, Mariano, 2020). However, Russo et al. (2021) claim that a teacher-facilitated learning environment and opportunities to work collaboratively with peers are paramount to facilitating productive struggle in mathematics.

Roble (2017) added that the traditional classroom shifted to an environment where students enjoy mathematics and develop not only their achievement level but also their problem-solving abilities, creativity, and critical thinking or higher-order thinking skills; thus, teachers can design high cognitive demand tasks that allow students to struggle but be productive simultaneously.

Level of Mathematical Proficiency of Junior High School Students

Table 7. Level of Mathematical Proficiency of Junior High School Students in terms of Conceptual Understanding.

Statment *I can ...*	**Mean**	**Standard Deviation**	**Remarks**
recall factual information	3.93	0.923	Agree
demonstrate an understanding of ideas and concepts	3.91	0.840	Agree
generate examples of concepts	3.78	0.919	Agree
apply comprehension of concepts to unfamiliar situations	3.66	0.927	Agree
break down the concepts into parts	3.78	0.917	Agree
transform and combine ideas to create new ideas	3.73	1.062	Agree

see the connections among concepts and procedures	3.98	0.881	Agree
give arguments to justify why some facts are the results of other concepts	3.82	0.971	Agree
get the idea of mathematical concepts to interact and build upon one another to form a unified whole	3.86	0.929	Agree
recognize and apply mathematics in non-mathematical contexts	3.75	1.010	Agree

Overall Mean= 3.82
Standard Deviation= 0.772
Verbal Interpretation= P

Rating	Scale	Remarks	Verbal Interpretation
5	4.21-5.00	Strongly Agree	Advance (A)
4	3.41-4.20	Agree	Proficient (P)
3	2.61-3.40	Neutral	Approaching Proficiency (AP)
2	1.81-2.60	Disagree	Developing (D)
1	1.00-1.80	Strongly Disagree	Beginning (B)

Table 7 reveals the level of mathematical proficiency of junior high school students in terms of conceptual understanding. It shows that the students who can see the connections among concepts and procedures receive the highest mean scores from the students with 3.98 and a standard deviation of 0.881. On the other hand, the students can apply comprehension of concepts to unfamiliar situations has a mean and standard deviation of 3.66 and 0.927, respectively, receives the lowest mean score of the students.

It can be gleaned from Table 7 that the level of Mathematical Proficiency in terms of Conceptual Understanding has a mean of 3.82 and a remark of "Agree." In this context, Junior High School Students are "Proficient" in terms of conceptual understanding. According to the study by Hlaing and Thein (2020), from the study results, students who have conceptual understanding know far more than isolated facts and procedures. They grasp why a mathematical concept is essential and the many situations it may be used. Gunawan et al. (2021) added that prior knowledge has a very strong influence on the success of mathematics, and early math skills are good predictors of future performance compared to reading and attention skills.

Table 8. Level of Mathematical Proficiency of Junior High School Students in terms of Procedural Fluency.

Statement *I can …*	**Mean**	**Standard Deviation**	**Remarks**
do write and mental procedures of computation	3.87	1.034	Agree
apply procedures efficiently	3.82	0.932	Agree
understand and explain the mathematical basis for the strategies and procedures that I use	3.81	0.909	Agree
demonstrate flexible use of strategies and methods	3.78	0.944	Agree
transfer procedures to different problems and contexts	3.69	0.929	Agree
can build or modify procedures from other procedures	3.70	0.932	Agree
make critical judgments about which procedures or strategies are appropriate for use in particular situations	3.86	0.958	Agree
recognize the meaning and interpretation of concepts to explain or verify the procedure	3.94	0.917	Agree
justify both informal strategies and commonly used procedures mathematically	3.85	0.921	Agree
I can use one method to solve and use another method to double-check	3.75	1.082	Agree

Overall Mean= 3.81
Standard Deviation= 0.802
Verbal Interpretation= P

Rating	Scale	Remarks	Verbal Interpretation
5	4.21-5.00	Strongly Agree	Advance (A)
4	3.41-4.20	Agree	Proficient (P)
3	2.61-3.40	Neutral	Approaching Proficiency (AP)
2	1.81-2.60	Disagree	Developing (D)
1	1.00-1.80	Strongly Disagree	Beginning (B)

Table 8 reveals the level of mathematical proficiency of junior high school students in terms of procedural fluency. It shows that the students can recognize the meaning and interpretation of concepts to explain or verify the procedure and receives the highest mean scores from the students with 3.94 and a standard deviation of 0.917. It also shows that the students who can do written and mental procedures of computation receive the second-highest mean scores from the student with 3.87 and a standard deviation of 1.034. On the other hand, the students can transfer procedures to different problems and contexts has a mean and standard deviation of 3.69 and .929, respectively, receives the lowest mean score among the students

It can be gleaned from Table 8 that the level of Mathematical Proficiency of Junior High School Students in terms of Procedural Fluency has a mean of 3.82 and a remark of "Agree." In this context, the level of mathematical proficiency of Junior High School Students in terms of Procedural Fluency is "Proficient."

In accordance with the findings of Hlaing and Thein (2020), where students that demonstrate procedural fluency understand processes, when and how to utilize them correctly, and can use them flexibly, effectively, and efficiently. Practicing processes should be based on comprehension because individuals who learn procedures without understanding can usually apply what they have learned, but those who understand with knowledge may change or adapt procedures to make them easier to utilize.

Table 9. Level of Mathematical Proficiency of Junior High School Students in terms of Strategic Competence.

I can …	Mean	Standard Deviation	Remarks
identify manageable questions	4.09	0.931	Agree
process the questions and turn them into a solvable problem	3.83	0.907	Agree
simplify various assumptions	3.85	0.936	Agree
identify the significant variable and generate a relationship between them	3.89	0.984	Agree
represent the situation mathematically	3.76	0.911	Agree
determine the meaning of the variable in my representation	3.88	0.942	Agree
select appropriate mathematical concepts and procedures	3.92	0.932	Agree
monitor the changes in my solution and change direction as needed	3.88	0.938	Agree
interpret and evaluate results in the context of the problem	3.81	0.907	Agree
explain why a conclusion does or doesn't make sense	3.73	0.939	Agree

Overall Mean= 3.86
Standard Deviation= 0.794
Verbal Interpretation= P

Rating	Scale	Remarks	Verbal Interpretation
5	4.21-5.00	Strongly Agree	Advance (A)
4	3.41-4.20	Agree	Proficient (P)
3	2.61-3.40	Neutral	Approaching Proficiency (AP)
2	1.81-2.60	Disagree	Developing (D)
1	1.00-1.80	Strongly Disagree	Beginning (B)

Table 9 reveals the level of mathematical proficiency of junior high school students in terms of strategic competence. It shows that the students who can identify manageable questions receive the highest mean scores from the students with 4.09 and a standard deviation of 0.931. It also shows that the students who can select appropriate mathematical concepts and procedures receive the second-highest mean scores from the student with 3.92 and a standard deviation of 0.932. On the other hand, the students can explain why a conclusion does or doesn't make sense, has a mean and standard deviation of 3.73 and 0.939, respectively, receives the lowest mean score the students. It can be gleaned from Table 9 that the level of Mathematical Proficiency of Junior High School Students in terms of Strategic Competence has a mean of 3.86 and a remark of "Agree." In this context, the level of mathematical proficiency of Junior High School Students in terms of Strategic Competence is "Proficient."

The result is supported by the claim of Awofala (2017) that strategic competence might be developed by constantly exposing oneself to mathematics problems that match real-life issue scenarios. The result of the Grooves (2013) study added that the students could personalize strategies by recognizing their ideas and strategic behavior; the students know how they knew they had all the way of solutions.

Table 10. Level of Mathematical Proficiency of Junior High School Students in terms of Adaptive Reasoning.

I can …	Mean	SD	Remarks
find patterns in solving problems	4.09	0.887	Agree
propose a conjecture	3.52	0.992	Agree
point out the relationship of the mathematical concept with the problem situation	3.77	0.975	Agree
discuss the procedure of the strategy that I have been selected	3.73	0.978	Agree
justify the strategy that I have been used	3.79	0.942	Agree
assess my own solution	3.80	1.014	Agree
re-check if the solution has been done under the chosen strategy	3.88	1.026	Agree
present reasoning for the solution	3.79	0.981	Agree
draw a correct conclusion	3.74	0.975	Agree
examine the validity of an argument	3.80	0.940	Agree
Weighted Mean	**3.79**	**0.822**	**Agree**

Overall Mean= 3.79
Standard Deviation= 0.822
Verbal Interpretation= P

Rating	Scale	Remarks	Verbal Interpretation
5	4.21-5.00	Strongly Agree	Advance (A)
4	3.41-4.20	Agree	Proficient (P)
3	2.61-3.40	Neutral	Approaching Proficiency (AP)
2	1.81-2.60	Disagree	Developing (D)
1	1.00-1.80	Strongly Disagree	Beginning (B)

Table 10 below reveals the level of mathematical proficiency of junior high school students in terms of adaptive reasoning. It shows that the students who can find patterns in solving problems receive the highest mean scores from the students with 4.09 and a standard deviation of 0.887. It also shows that the students can re-check if the solution has been done under the chosen strategy with a mean of 3.88 and a standard deviation of 1.026. On the other hand, the students can propose a conjecture that has a mean and standard deviation of 3.52 and 0.992, respectively, and receives the lowest mean score from the students.

It can be gleaned from Table 10 that the level of Mathematical Proficiency of Junior High School Students in terms of Adaptive Reasoning has a mean of 3.79 and a remark of "Agree." In this context, the level of mathematical proficiency of Junior High School Students in terms of Strategic Competence is "Proficient."

In accordance with the study of Altarawneh et al. (2021), students that are proficient in Adaptive Reasoning can track their progress by adopting a solution strategy, measuring the appropriate solution, and providing reasoning that entails logic to understand and defend a solution. However, Moodley (2008) reveals that some of the students performed poorly in showcasing adaptive reasoning because the teaching of mathematics does not emphasize the process. To aid the situation given by Moodley, Ally, and Christiansen (2013) suggest that the teacher should encourage the students to actively engage in justification, and providing inappropriate analogies should be minimized.

Table 11. Level of Mathematical Proficiency of Junior High School Students in terms of Productive Disposition

Statement *As a learner …*	**Mean**	**Standard Deviation**	**Remarks**
I enjoy learning mathematics	3.47	1.281	Agree
I like problem-solving in mathematics	3.26	1.214	Neutral
I find it favorable when asked to complete a difficult mathematical task	3.14	1.290	Neutral
I can solve a mathematics problem within a few minutes	3.14	1.166	Neutral
I see a turning point in my life that made me look at mathematics differently	3.54	1.206	Agree
I feel comfortable asking questions about someone else's solution to a mathematical problem	3.48	1.247	Agree
I am satisfied with my solution to a mathematics problem	3.51	1.127	Agree
I am curious about discoveries in mathematics	3.67	1.173	Agree
I am confident about my own mathematical abilities	3.12	1.210	Neutral
I am assured that I will do well on a mathematics test	3.35	1.202	Neutral

Overall Mean= 3.37
Standard Deviation= 0.987
Verbal Interpretation= AP

Rating	**Scale**	**Remarks**	**Verbal Interpretation**
5	4.21-5.00	Strongly Agree	Advance (A)
4	3.41-4.20	Agree	Proficient (P)
3	2.61-3.40	Neutral	Approaching Proficiency (AP)
2	1.81-2.60	Disagree	Developing (D)
1	1.00-1.80	Strongly Disagree	Beginning (B)

Table 11 reveals the level of mathematical proficiency of junior high school students in terms of productive disposition. It shows that the learners who are curious about discoveries in mathematics receive the highest mean scores from the learners with 3.67 and a standard deviation of 1.173. In addition, it also reveals that the students are satisfied with their solution to a mathematics problem with a mean of 3.51 and a standard deviation of 3.67. However, the learners see a turning point in their life that made them look at mathematics differently, with a mean of 3.54 and a standard deviation of 1.206. On the other hand, the learners who are confident about their own mathematical abilities have a mean and standard deviation of 3.52 and 0.992, respectively, receives the lowest mean score among the students. It can be gleaned from Table 11 that the level of Mathematical Proficiency of Junior High School Students in terms of Productive Disposition has a mean of 3.37 and a remark of "Neutral." In this context, the level of mathematical proficiency of Junior High School Students in terms of Productive Disposition is "Approaching Proficiency."

According to the findings of the study conducted by Awofala et al. (2020) that students with a high mathematical productive disposition can develop a growth mindset in learning mathematics which enables them to have a positive attitude towards mathematics. They also emphasize that attitude toward mathematics is not a proxy for a productive disposition. Hann (2020) also added that teachers play a big role in improving the productive mathematical disposition.

Relationship Between Mathematics Teaching Practices and Mathematical Proficiency of Junior High School Students

The relationship between mathematics teaching practices and mathematical proficiency of the junior high school students was revealed in the following table, which shows the computed Pearson r correlation.

Table 12. The Relationship Between Mathematics Teaching Practices and Mathematical Proficiency of Junior High School Students.

Mathematics Teaching Practices	Mathematical Proficiency	r	p	Interpretation
Establish Mathematical Goal	Conceptual Understanding	0.496*	0.000	Moderate
	Procedural Fluency	0.457*	0.000	Moderate
	Strategic Competence	0.485*	0.000	Moderate
	Adaptive Reasoning	0.450*	0.000	Moderate
	Productive Disposition	0.459*	0.000	Moderate
Make Thinking Visible	Conceptual Understanding	0.583*	0.000	Moderate
	Procedural Fluency	0.500*	0.000	Moderate
	Strategic Competence	0.544*	0.000	Moderate
	Adaptive Reasoning	0.516*	0.000	Moderate
	Productive Disposition	0.537*	0.000	Moderate
Building Procedural Fluency from Conceptual Understanding	Conceptual Understanding	0.567*	0.000	Moderate
	Procedural Fluency	0.470*	0.000	Moderate
	Strategic Competence	0.520*	0.000	Moderate
	Adaptive Reasoning	0.497*	0.000	Moderate
	Productive Disposition	0.507*	0.000	Moderate
Use and Connect Mathematical Representation	Conceptual Understanding	0.600*	0.000	Moderate
	Procedural Fluency	0.486*	0.000	Moderate
	Strategic Competence	0.542*	0.000	Moderate
	Adaptive Reasoning	0.518*	0.000	Moderate
	Productive Disposition	0.532*	0.000	Moderate
Elicit and Use Evidence of Students' Thinking	Conceptual Understanding	0.607*	0.000	Moderate
	Procedural Fluency	0.516*	0.000	Moderate
	Strategic Competence	0.579*	0.000	Moderate
	Adaptive Reasoning	0.554*	0.000	Moderate
	Productive Disposition	0.529*	0.000	Moderate
Support Productive Struggle	Conceptual Understanding	0.560*	0.000	Moderate
	Procedural Fluency	0.486*	0.000	Moderate
	Strategic Competence	0.541*	0.000	Moderate
	Adaptive Reasoning	0.507*	0.000	Moderate
	Productive Disposition	0.508*	0.000	Moderate

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

Table 12 presents the relationship between mathematics teaching practices and the mathematical proficiency of junior high school students. Table 12 shows that there is a moderate correlation (r =0.496, 0.457, 0.485, 0.450, 0.459) between the mathematics teaching practices in terms of establishing mathematical goals with the five-strand mathematical proficiency. It also shows that there is a significant correlation (r =0.583, 0.500, 0.544, 0.516, 0.537) between the mathematics teaching practices in terms of make thinking visible with the five-strand mathematical proficiency (conceptual understanding, procedural fluency, strategic competence, adaptive reasoning, productive disposition). The table also reveals that there is a moderate correlation (r =0.600, 0.486, 0.542, 0.518, 0.532) between the mathematics teaching practices in terms of using and connect mathematical representation with the five-strand mathematical proficiency. In the table, it can be shown that there is a moderate correlation (r =0.600, 0.486, 0.542, 0.518, 0.532) between the mathematics teaching practices in terms of using and connect mathematical representation with the five-strand mathematical proficiency.

It can be gleaned in table 12 that there is a significant relationship between the mathematics teaching practices of teachers and the mathematical proficiency of junior high school students. The quality of learning opportunities for learners impacts learning outcomes. According to Lipton and Wellman (2014), the teacher's quality determines the variation in students' learning achievement, and quality teaching matters for successful students. The teacher has a significant role in developing students' mathematical proficiency. Alongside the teacher's mathematical content knowledge, the teaching practices used by the teachers also affect the student's mathematical proficiency.

Summary of Findings

The essence of this study aimed to determine the significant relationship between mathematics teaching practices on the mathematical proficiency of junior high school students.

Specifically, it sought to answer the following questions: 1. What is the level of frequency of mathematics teaching practices of teachers in terms of establishing mathematical goals, make thinking visible, build procedural fluency from conceptual understanding, use, and connect mathematical representation, elicit, and use evidence of students' thinking and support productive struggle? 2. What is the level of mathematical proficiency of junior high school students in terms of conceptual understanding, procedural fluency, strategic competence, adaptive reasoning, and productive disposition? 3. Is there a significant relationship between the mathematics teaching practices on the mathematical proficiency of Junior High School Students?

In concluding this study, a descriptive study was used to collect the data and information needed to test the hypothesis and to answer questions concerning the relationship between the mathematics teaching practices of the teacher on the mathematical proficiency of the students. The instrument used was a questionnaire in the form of a checklist and a Five-Likert scale to gather information headed on the accomplishment of the study. The respondents of the study were composed of one hundred sixty-two (162) respondents.
Mean, and standard deviation was used to determine the level of mathematics teaching practices and level of mathematical proficiency of junior high school students. Pearson r correlation was used to determine the relationship between mathematics teaching practices and mathematical proficiency of junior high school students.

Based on the data gathered, different findings are at this moment presented:

1. Level of mathematics teaching practices

The level of mathematics teaching practices in terms of establish mathematical goal got (OM=4.36 and SD=0.675) was verbally interpreted as "Very High Implemented." The make thinking visible got an (OM = 4.37 and SD=0.647) was verbally interpreted as "Very High Implemented." The build procedural fluency from conceptual understanding got an (OM= 4.44 and SD=0.608) was verbally interpreted as "Very High Implemented." The use and connect mathematical representation got an (OM=3.37 and SD=0.625) got the verbal interpretation of "Very High Implemented." The elicit and use of students thinking got an (OM=4.37 and SD=0.630) was verbally interpreted as "Very High Implemented" Lastly, the support productive struggle got an (OM=4.38 and SD=0.702) was verbally interpreted as "Very High Implemented."

2. Level of mathematical proficiency

The level of mathematical proficiency in terms of conceptual understanding got an (OM=3.82 and SD=0.771) was verbally interpreted as "Proficient." The procedural fluency got an (OM=3.81 and SD=0.802) was verbally interpreted as "Proficient." The procedural fluency got an (OM=3.86 and SD=0.794) was verbally interpreted as "Proficient." The adaptive reasoning got an (OM=3.79 and SD=0.821) and was verbally interpreted as "Proficient." Lastly, the productive disposition got an (OM=3.37 and SD=0.987) was verbally interpreted as "Approaching Proficiency."

3. Relationship between Mathematics Teaching Practices and Mathematical Proficiency of Junior High School Students

There is a moderately significant relationship between mathematical teaching practices and mathematical proficiency where the computed r-value falls under 0.4 – 0.7 in the Guilford Rule of thumb.

Conclusion

Based on the foregoing findings, the following conclusion was drawn. This study concluded that the junior high school students of Mary Help of Christians College – Salesian Sisters, Inc. are proficient in Mathematics. Alongside, this research also concludes that mathematics teaching practices are very evident and highly implemented by the teachers in the teaching and learning process. Lastly, this study failed to accept the null hypothesis, and there is a significant relationship between mathematics teaching practices and the mathematics proficiency of junior high school students that the quality of practices of teachers reflects the proficiency of the students.

Recommendations

Given the presented conclusions, the following recommendations are hereby deduced:

1. Teachers' professional development must be high quality, sustained, and systematically designed and implemented in order to promote mathematical proficiency.
2. The school must continue to support the teacher's work engagement in sustained efforts to improve not only the mathematical instruction but also the mathematics proficiency of the students.

3. There must be strict coordination of the curriculum, instructional materials, assessments, and instructions for the improvement of the mathematical proficiency of the students.
4. The future researcher can conduct a similar study, but instead of a survey questionnaire to assess the mathematical proficiency of the junior high school student, use an exam questionnaire.

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