IMPROVING THE PERFORMANCE AND ATTITUDES IN MATHEMATICS OF GRADE 9 STUDENTS AT BARAS RURAL DEVELOPMENT HIGH SCHOOL THROUGH PARADEIGMATH: A PEER TUTORING AND EXPLICIT TEACHING INTERVENTION

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ABSTRACT

AÑONUEVO, ZOREN I. IMPROVING THE PERFORMANCE AND ATTITUDES IN MATHEMATICS OF GRADE 9 STUDENTS AT BARAS RURAL DEVELOPMENT HIGH SCHOOL THROUGH PARADEIGMATH: A CLASSWIDE PEER TUTORING AND EXPLICIT TEACHING INTERVENTION

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The purpose of the study was to improve the performance and attitudes in Mathematics of Grade 9 students of Baras Rural Development High School. Specifically, it sought to answer the following questions: 1) What is the mean performance of Grade 9 students before they are immersed in the Paradeigmath class wide peer tutoring and explicit teaching intervention? 2) What is the mean performance of Grade 9 students after they are immersed in the Paradeigmath class wide peer tutoring and explicit teaching intervention? 3) Is there a significant difference between the performances of the Grade 9 students before and after they are immersed in Paradeigmath class wide peer tutoring and explicit teaching intervention? 4) What is the attitude towards Mathematics of the Grade 9 students before they are immersed in Paradeigmath class wide peer tutoring and explicit teaching intervention? 5)What is the attitude towards Mathematics of the Grade 9 students after they are immersed in the Paradeigmath class wide peer tutoring and explicit teaching intervention? 6) Is there a significant difference between the attitudes of the Grade 9 students before and after they are immersed in Paradeigmath class wide peer tutoring and explicit teaching intervention? 7) What are the lived experiences of the tutors and the tutees in the peer-tutoring activity?

The following were the hypotheses: 1) There is a significant difference between the performances of the Grade 9 students before and after they are

immersed in Paradeigmath class wide peer tutoring and explicit teaching intervention. 2) There is a significant difference between the attitudes of the Grade 9 students before and after they are immersed in Paradeigmath class wide peer tutoring and explicit teaching intervention.

The respondents of this study were the Grade 9 Maalab students of the Baras Rural Development High School for school year 2023- 2024. These students were observed to be lacking in the basic learning competencies in Algebra which were supposedly taught in grade 7. However, due to the effect of the global COVID-19 pandemic, the educational system in the Philippines shifted to distance learning. This abrupt shift negatively impacted the learning of the students. To address this problem, the researcher proposed the ParadiegMath Peer-Tutoring and Explicit Teaching Intervention.

The following were the findings of this study:1) The group's mean performance before they were immersed in ParadiegMath Peer-Tutoring and Explicit Teaching Intervention was 18.31. 2) The group's mean performance after they were immersed in ParadiegMath Peer-Tutoring and Explicit Teaching Intervention was 29.62. 3) There is a significant difference between the performances of the Grade 9 students before and after they are immersed in Paradeigmath Peer Tutoring and Explicit teaching Intervention. 4) The over-all weighted mean of the pre- attitudes towards Mathematics of the students is x= 4.49 or 4 or interpreted as "agree". 5) The over-all weighted mean of the post-attitude towards Mathematics of the students is x= 4.67 or 5 which can be interpreted as "strongly agree". 6) There is a significant difference between the

attitudes of the Grade 9 students before and after they are immersed in Paradeigmath Peer Tutoring and Explicit Teaching Intervention. 7) Among the leading themes is the “attitude towards tutoring”. Under this are “happiness” and “sense of pride”. The tutors divulged that they were extremely happy knowing that they were able to lend help to their respective tutees. Another is “sense of service” and “sense of responsibility”. In terms of “techniques and mechanisms” used during tutoring, leading among them is “giving of more examples and various scenarios”. Providing “step by step procedure” also worked during the peer-tutoring according to the tutors. In terms of challenges met by the tutors during the tutoring there were “lack of communication”, “tutors became impatient at times”, “lessons were challenging”, and “self-doubt”. Tutees have expressed their “attitudes towards tutoring” citing that they experienced “happiness”, “more learning”, and “learning has been more fun and easier”. These three are interconnected emotions experienced by the tutees all throughout the conduct of intervention. Among the responses that emerged in terms of the “techniques/ mechanisms used by the tutors” were “words of affirmation”, “relating the topics to real-life concepts”, “giving more explanations”, and “step-by-step procedure”. The tutees also mentioned that their participation to the peer-tutoring intervention was “big help” and provided them with “huge assistance”.

Based from the findings of the study, the following conclusions were made: 1) It was tested and found out that there is indeed a significant difference between the mean performances in mathematics of Grade 9 students before and after they were immersed in ParadeigMath Peer-Tutoring and Explicit Teaching intervention.

This means that intervention was effective in improving the performance of the students in select topic in basic algebra. 2) It was tested and found out that there is indeed a significant difference between the attitudes towards mathematics of Grade 9 students before and after they were immersed in ParadeigMath Peer-Tutoring and Explicit Teaching intervention. This means that intervention was effective in improving the attitudes towards mathematics of the students.

The following recommendations were made: 1) It is recommended that other mathematics teachers adopt and/ or improve the design of the intervention program introduced in this research to cater other learning competencies. 2) It is recommended that teachers from other learning areas also explore other types or forms of peer-tutoring. 3) It is recommended that teachers also explore other strategies and techniques that can be combined with peer-tutoring and explicit teaching. 4) It is recommended for interested teacher-researchers to develop standard tutoring materials that will cater to specific learning competencies.

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Z.I.A.

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I. Context and Rationale

Mathematics is a vital skill that is particularly important in the present era of globalization, which has led to significant technological advancements and intense worldwide competition. Since mathematics is a subject that affects people of all ages and conditions, it must be studied thoroughly (K-12 Curriculum Conceptual Framework). With the implementation of the K-12 program, the Department of Education has given important attention to Science and Technology, Engineering & Mathematics (STEM) subjects, however, mathematics has been considered by some learners as a subject that does not have a direct and significant impact on their lives.

One of the crucial foundations of learning higher mathematics is the mastery of the basic concepts of algebra. Algebra can be viewed as a language of mathematics; playing a major role for students' opportunities to pursue many different types of education in a modern society. It may therefore seem obvious that algebra should play a major role in school mathematics. However, analyses based on data from several international large-scale studies have shown that there are great differences between countries when it comes to algebra; in some country's algebra plays a major role, while this is not the case in other countries (Grønmo, 2018).

Algebra bolsters these logic skills and introduces abstract thinking. It gets across the idea that symbols such as x and y stand for numbers that vary and can be used to find missing pieces of a mathematical or real-life puzzle or to understand changing relationships (EdSource, 2009).

Algebra is often the first mathematics subject that requires extensive abstract thinking, a challenging new skill for many students. Algebra moves students beyond an emphasis on arithmetic operations to focus on the use of symbols to represent numbers and express mathematical relationships. Understanding algebra is a key for success in future mathematics courses, including geometry and calculus. Many mathematics experts also consider algebra knowledge and skills important for post-secondary success as well as for producing a skilled workforce for scientific and technical careers (Katz, 2007).

The Department of Education introduced massive efforts to recover learning loss through DepEd Order no. 13 or the “Adoption of the National Learning Recovery Program”. One of its programs is the National Mathematics Program (NMP). The program aims to drive collaborative action to promote better numeracy and mathematics learning in schools across all grade levels. Specifically, efforts under the NMP shall be geared towards (i) improving shared understanding of numeracy and its critical connections with mathematics and the real-world; (ii) increasing system-wide capacity to implement key principles in developing numeracy and mathematics skills; (iii) increasing the availability of broad and reliable data on numeracy and mathematics progress and achievement.

In the Bicol Region, DepEd- Bicol has launched the *6Bs, Bawat Batang Bicolano Bihasang Bumasa at Bumilang* (each Bicolano child proficient in reading and writing), the initiative is designed to strengthen the coordination and collaboration between schools and communities. It will facilitate the sharing of

resources and capacities to uplift the standards in literacy and numeracy among students.

Furthermore, the twin goals of the mathematics curriculum of the K-12 are problem solving and critical thinking. To achieve these goals, mastery of the basic skills must be prioritized and factors affecting the learning must be understood in the context of the learners.

The global pandemic has caused disconnections among students and their peers. The grade 9 students of the Baras Rural Development High School for school year 2023- 2024 were among those students that were highly affected by the distance learning especially in algebra. Moreover, in the recent numeracy test conducted among the grade 9 students, majority of the students fall under “needs major support” in their numeracy level.

To provide basic education of a high standard and to improve the current state in mathematics classrooms, teachers are expected to think outside the box and explore every avenue available.

The grade 9 students at the school year 2023-2024 were the ones who experienced the difficulties of the distance learning specifically in mathematics in grade 7. It was observed by the researcher, being the mathematics teacher, that the students lacked the foundation in the selected topics in algebra in grade 7. This challenge has impeded the students from learning the lessons in grade 9 mathematics at present. Moreover, teaching-learning process does not lie in the hands of the teachers alone. It can also be enhanced by developing the skills of

those students who are potential tutors to those students needing scaffolding and support in their learning.

Since there was an urgent need to address this learning gap, the researcher organized Paradeigmath: a peer-tutoring and explicit teaching intervention in teaching mathematics. Purposeful pairing of fast learners to students needing support is likely since the grade 9 students of Baras Rural Development High School were grouped heterogeneously.

This action research aimed to address the learning loss in basic algebra of Grade 9- Maalab students at Baras Rural Development High School for school year 2023-2024 through Paradeigmath: a classwide peer-tutoring and explicit teaching intervention in teaching mathematics. This strategy could increase the performance of students in basic algebra and further increase the attitudes of students towards mathematics.

II. Innovation, Intervention, and Strategy

The researcher explored the benefits of using peer-tutoring combined with explicit teaching. In the context of the Baras Rural Development High School, purposeful pairing of students is possible because students are grouped heterogeneously. Heterogeneous grouping provides opportunities for students to learn from their peers who are more knowledgeable in the subject. The researcher named the project “ParadeigMath” from the words *“paradeigma”*, Greek word origin of *“paradigm”,* and “mathematics”. The word "ParadeigMath” literally means “paradigm shift in teaching mathematics”.

The removal of the ranking system by the Department of Education from the assessment which eliminates barriers among learners, paves the way for learners to collaborate and help other learners in studying. Moreover, it is clearly stipulated in DepEd Order no. 8 s. 2015 that “at the heart of this assessment framework is the recognition and deliberate consideration of the learner’s proximal development.” Lev Vygotsky (1896 – 1934) as cited in McLeod (2018) defined the ZPD (zone of proximal development) as the difference between what a learner can do without help and what he or she can achieve with guidance and encouragement from skilled partner. Thus, the term “proximal” refers to those skills that the learner is “close” to mastering.

A. **Enrichment Activity for Tutors**

The peer tutors were identified based on their grades in Mathematics in second quarter of school year 2023- 2024. The grading system in Mathematics prescribed by the Department of Education is: Written Works (40%), Performance Tasks (40%), and Quarterly Assessment (20%). This grading system is holistic in identifying the tutors. Moreover, tutors underwent screening and interview.

Furthermore, the researcher prepared a mathematics enrichment activity plan for tutors (see table1). This was discussed to the head teacher and school head. The peer-tutors underwent the said enrichment activity to refresh their competencies in Algebra prior to the peer tutoring activity. The enrichment activity was conducted from Monday to Thursday from 4:00 to 5:00 in the afternoon. The first day was intended for orientation of the tutors.

Table 1
Mathematics Enrichment Activity Plan for
ParadeigMath Tutors

Day	Lesson Objectives	Activities/ Strategies	Materials
2	1. interprets the meaning of a^n where n is a positive integer	▪ Lecture ▪ Peer-tutoring simulation ▪ Feed backing	▪ Hand-outs ▪ Powerpoint ▪ Slate board
	2. differentiates between constants and variables in a given algebraic expression.	▪ Lecture ▪ Think-Pair-Share ▪ Peer-tutoring simulation ▪ Feed backing	▪ Hand-outs ▪ Powerpoint ▪ Slate board
3-4	3. evaluates algebraic expressions for given values of the variables	▪ Group game ▪ Think-Pair-Share ▪ Video viewing ▪ Peer-tutoring simulation ▪ Feed backing	▪ Hand-outs ▪ Powerpoint ▪ Slate board
5	4. classifies algebraic expressions which are polynomials according to degree and number of terms	▪ Lecture ▪ Think-Pair-Share ▪ Video viewing ▪ Peer-tutoring simulation ▪ Feed backing	▪ Hand-outs ▪ Powerpoint ▪ Slate board
6-7	5. adds and subtracts polynomials.	▪ Group games ▪ Think-Pair-Share ▪ Video viewing ▪ Peer-tutoring simulation ▪ Feed backing	▪ Hand-outs ▪ Powerpoint ▪ Video ▪ Slate board
8-10	6. derives the laws of exponent.	▪ Lecture ▪ Think-Pair-Share ▪ Group games ▪ Video viewing ▪ Peer-tutoring simulation ▪ Feed backing	▪ Hand-outs ▪ Powerpoint ▪ Video ▪ Slate board
11-15	7. multiplies and divides polynomials.	▪ Group games ▪ Dyad ▪ Think-Pair-Share ▪ Video viewing ▪ Peer-tutoring simulation ▪ Feed backing	▪ Hand-outs ▪ Powerpoint ▪ Video ▪ Slate board
16-18	8. uses algebraic methods to find the: (a) product of two binomials; (b) product of the sum and	▪ Lecture ▪ Group games ▪ Think-Pair-Share ▪ Video viewing	▪ Hand-outs ▪ Powerpoint ▪ Video ▪ Slate board

Table 1

(Continued)

Day	Lesson Objectives	Activities/ Strategies	Materials
	difference of two terms; (c) square of a binomial; (d) cube of a binomial; (e) product of a binomial and a trinomial.	▪ Peer-tutoring simulation ▪ Feed backing	
19	9. solves problems involving algebraic expressions.	▪ Lecture ▪ Think-Pair-Share ▪ Peer-tutoring simulation ▪ Feed backing	▪ Hand-outs ▪ Powerpoint
20	10. differentiates between algebraic expressions and equations.	▪ Lecture ▪ Think-Pair-Share ▪ Video viewing ▪ Peer-tutoring simulation ▪ Feed backing	▪ Hand-outs ▪ Powerpoint ▪ Video ▪ Slate board
	11. translates English sentences to mathematical sentences and vice versa.	▪ Games ▪ Think-Pair-Share ▪ Video viewing ▪ Peer-tutoring simulation ▪ Feed backing	▪ Hand-outs ▪ Powerpoint ▪ Video ▪ Slate board
21-22	12. differentiates between equations and inequalities.	▪ Lecture ▪ Think-Pair-Share ▪ Peer-tutoring simulation ▪ Video viewing ▪ Feed backing	▪ Hand-outs ▪ Powerpoint ▪ Video ▪ Slate board
	13. finds the solution of linear equation or inequality in one variable.	▪ Lecture ▪ Think-Pair-Share ▪ Video viewing ▪ Peer-tutoring simulation ▪ Feed backing	▪ Hand-outs ▪ Powerpoint ▪ Slate board
23-24	14. solves linear equation or inequality in one variable involving absolute value by: (a) graphing; and (b) algebraic methods.	▪ Lecture ▪ Think-Pair-Share ▪ Video viewing ▪ Peer-tutoring simulation ▪ Feed backing	▪ Hand-outs ▪ Powerpoint ▪ Video ▪ Slate board

The teacher-researcher set the following conditions to the tutors: 1) They are exempted from taking all the formative tests (quizzes) during the peer tutoring

activity; 2) They are required to take the quarterly assessment only; 3) The performances of their tutees have no bearing on their grades; 4) They were awarded with certificate of recognition during the quarterly recognition.

B. **ParadeigMath Peer-Tutoring and Explicit Teaching Intervention**

The research is timely because the Department of Education introduced the Catch-Up Fridays through DepEd Memorandum no. 1 series of 2024 also known as the “Implementation of the Catch-up Fridays”.

The actual ParadeigMath peer-tutoring and explicit teaching intervention was conducted every Friday and during free time of the students. This was to ensure that the present learning competencies in grade 9 were not compromised.

Every intervention class is structured as follows:

- **The teacher-researcher followed the usual flow of the lesson.** The teacher-researcher prepared lesson logs to guide him in the conduct of the intervention.
- **The teacher researcher used the explicit teaching (I do- We do-You do).** The peer-tutoring part took place during the “we do” part. This is where the peer-tutoring and explicit teaching intervention complemented each other.
- **Feedbacking Session.** Every after the intervention, the teacher set feedbacking session for the tutors in the afternoon before the start of the enrichment session. During the feedbacking, the teacher-researcher

conducted debriefing and reflection with the tutors. It was in this part where "what went well" and "what went wrong" were discussed and addressed.

Scruggs et al., (2010) defines peer-tutoring as an intervention in which students work in pairs to master academic skills or content. Peer tutoring can involve partners who are of the same age or of different ages (cross-age).

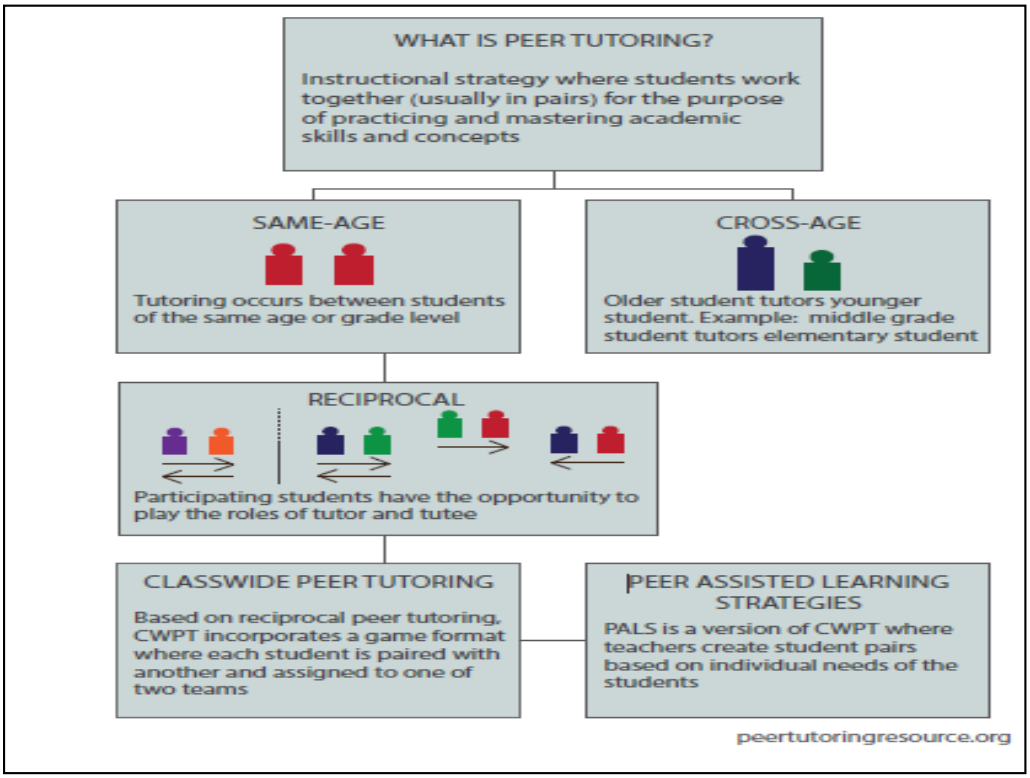

Figure 1

Common Peer Tutoring Models

Moreover, Scruggs et al., (2010) also presented the instructional components of the peer tutoring model which include: (a) explicit teaching of students in how to be tutoring experts, (b) purposeful partner assignment, (c) careful preparation of tutoring materials, (d) highly structured tutoring procedures

that include specific feedback for tutors to provide tutees, (e) expert role reversal, and (f) active teacher monitoring.

On the other hand, Archer & Hughes (2011) defines explicit instruction as “a structured, systematic, and effective methodology for teaching academic skills. It is called explicit instruction because it is an unambiguous and direct approach to teaching that includes both instructional design and delivery procedures.”

Moreover, Archer and Hughes (2011) consider explicit instruction an efficient and practical approach for teaching math to students with LD and math difficulties. In fact, explicit instruction was cited as one of the high impact teaching strategies in the book “High Impact Teaching Strategies: Excellence in Teaching and Learning” published by Department of Education and Training, Melbourne in 2020. Effective teachers use explicit teaching to provide instruction, demonstrate concepts and build student knowledge and skills. In explicit teaching practice, teachers show students what to do and how to do it, and create opportunities in lessons for students to demonstrate understanding and apply the learning.

Explicit teaching is effective in accelerating student performance. The aim is to teach generalizations beyond rote learning, and to sequence learning. In explicit teaching practice, teachers constantly monitor students’ progress towards challenging goals.

Considering the benefits of peer-tutoring and explicit instruction, the researcher maximized them by combining the two instructional methods to improve the performance of the students in select lessons in Algebra.

III. Action Research Questions

This research primarily focused on improving the performance of struggling students in mathematics. Specifically, it sought to answer the following questions:

1. What is the mean performance of Grade 9 students before and after they are immersed in the Paradeigmath class wide peer tutoring and explicit teaching intervention?
2. Is there a significant difference between the performances of the Grade 9 students before and after they are immersed in Paradeigmath class wide peer tutoring and explicit teaching intervention?
3. What is the attitude towards Mathematics of the Grade 9 students before and after they are immersed in Paradeigmath class wide peer tutoring and explicit teaching intervention?
4. Is there a significant difference between the attitudes of the Grade 9 students before and after they are immersed in Paradeigmath class wide peer tutoring and explicit teaching intervention?
5. What are the lived experiences of the tutors and the tutees in the peer-tutoring activity?

Hypotheses

This study posed the following hypotheses:

1. There is a significant difference between the performances of the Grade 9 students before and after they are immersed in Paradeigmath class wide peer tutoring and explicit teaching intervention.

2. There is a significant difference between the attitudes of the Grade 9 students before and after they are immersed in Paradeigmath class wide peer tutoring and explicit teaching intervention.

IV. Action Research Methods

a. Participants and Sources of Data and Information

The main data of the study were obtained from the 14 tutors and 18 tutees of Grade 9- Maalab of the Baras Rural Development High School for school year 2023- 2024. The select topics were based on the competencies in algebra in Grade 7 in the K-12 Curriculum Guide of mathematics.

The Tutors

The peer tutors were identified through their average grades in mathematics for the latest quarter. The grading system in Mathematics prescribed by the Department of Education is: Written Works (40%), Performance Tasks (40%), and Quarterly Assessment (20%). This grading system is already holistic in identifying the tutors. The tutors underwent screening and interview.

The Tutees

The tutees were those identified students in Grade 9- Maalab who needed major support in learning mathematics.

b. Data Gathering Methods

The researcher sent letter and parental consent to the parents and legal guardians of the students. An orientation with the parents and students was held

to discuss the purpose of the research and to discuss that their participation was voluntary, and they were free to decline to participate.

The entire research study used mixed method. Since this study aimed to investigate whether Paradeigmath (a peer tutoring and explicit teaching intervention) improved the performance of the students in Mathematics or not, a quasi-experimental study specifically the one-group pretest-posttest design was employed. The one-group pretest-posttest design is a type of quasi-experiment in which the outcome of interest is measured two times: once before and once after exposing a non-random group of participants to a certain intervention/treatment (Choueiry, n.d.).

For the qualitative part, the study utilized phenomenological approach. It aims to explore and delve deeper into the lived experiences of the tutors and the tutees.

The teacher-researcher used interview and observation to gather the responses and insights from the lived experiences of the tutors and tutees. The teacher-researcher prepared semi-structured interview as one of the tools in gathering the data. Moreover, the teacher-researcher also used observation to verify the responses of the tutors and tutees during the conduct of the intervention.

Qualitative research study according to Mills and Birks (2014) “aimed to examine phenomena that impact on the lived reality of individuals or groups in a particular cultural or social context.” Phenomenology aimed to accurately describe the phenomenon without a pre-existing knowledge to a framework, but remaining truth to the facts (Groenewald, 2004). More so, using qualitative research, the

researcher would be able to connect with their participants and to see the world from their viewpoints (Corbin & Strauss, 2015). The researcher found this method most applicable to the inquiry to provide a comprehensive analysis on the lived experiences of the tutors and tutees.

After the interviews, the researcher conducted a thematic analysis of the interview responses. The teacher researcher adopted Colaizzi's process of thematic analysis.

Table 2
Seven Phases of Thematic Analysis

Step	Action
1	Reading and rereading the descriptions
2	Extracting significant statements
3	Formulating meanings
4	Categorizing into clusters of themes and validating with original text
5	Describing
6	Returning to participants
7	Incorporating any changes based on the informants' feedback

The first step of the thematic analysis aims to acquire general feeling for experience. The researcher read and reread the descriptions based on the response from the interview.

The second step is identifying relevant statements which aims to generate information pertaining directly to the phenomenon studied. The third step conducted by the researcher is formulating meanings which aims to illuminate meanings hidden in various contexts of the phenomenon.

This was followed by categorizing into cluster of themes and validating with the original texts which aims to identify experiences common to all informants. The next step is describing which aims to generate a prototype. This was followed by returning to the participants to validate the findings.

Finally, the researcher incorporated any changes based on the informants' feedback.

a. **Instrumentation and Validation**

One of the tools used in this study was the 95-item summative test which was subjected to item analysis. To test its reliability, split-half method was used.

A 25-item attitudinal scale was used to measure the attitudes of the tutors and tutees towards Mathematics. The items in the Attitudinal Inventory was taken from the Attitudinal Inventory used by Padilla (2008) in his study. The researcher asked permission from the original researcher to use those items. The tool was administered to group of students not included in the study to determine their pre-attitude and after two weeks, it was again administered to the same group of students to get their post-attitude. To test its reliability, the researcher will use the pre-test- post –test method and the Wilcoxon test. The statements were rated Six-Point Likert Scale with options from "very strongly agree: to "very strongly disagree". The researcher put asterisk (*) before the negative statements. The higher the value, the more the positive the attitudes towards mathematics, with the exception of the following items: 2, 4, 6, 7, 8, 10, 12, 16, 20, 21, 22, 23, and 25 which are negative statements. Responses to negative statements were reversed

before the inclusion in the computation of general weighted mean of each category. For example, if 1 or VSD (Very Strongly Disagree) was selected, the numeric value was changed to 6 or VSA (Very Strongly Disagree).

b. **Administration of Pre-test**

The pre-test was administered among the tutors and tutees before the conduct of the actual intervention program. The researcher used the validated 50-item teacher-made test. The test was composed of selected grade 7 algebra learning competencies not thoroughly discussed in the distance learning when the respondents were in grade 7.

c. **Administration of Pre-attitudinal Inventory**

The pre-attitudinal inventory was administered among the tutors and tutees before the conduct of the actual intervention program.

d. **Administration of Post-test**

The post-test was administered after exposing the respondents to the intervention program.

e. **Administration of Post-attitudinal Inventory**

The post-attitudinal inventory was administered among the tutors and tutees right after the conduct of the actual intervention program.

V. Discussion of the Results and Reflections

This part contains the presentation of data gathered from the experiment, analysis of results of the statistical tools used, and interpretation of the findings of the study.

1. Mean Performance of Grade 9 Students Before and After they are Immersed in the Paradeigmath Class Wide Peer Tutoring and Explicit Teaching Intervention

Table 3 shows that the mean performances of the students in the 50-item test before and after they were immersed in the Paradeigmath Class Wide Peer Tutoring and Explicit Teaching Intervention. To give meaning and context to the scores, the assessment scale in the National Achievement Test was used: 0- 24 (Not Proficient); 25- 49 (Low Proficient); 50- 74 (Nearly Proficient); 75- 89 (Proficient); 90- 100 (Highly Proficient). The group's mean performance of the students in before they were immersed in the intervention was 18.31 or 37 % (Low Proficient). This mean performance was low, therefore, there was indeed a need to go back to the select lessons in algebra and conduct an intervention for the students.

This low mean performance can be attributed to the learning loss incurred during the global COVID 19 pandemic. The group of students included in the study was in modular set-up in grade 7. Challenges and gaps have been observed as result of this disruption the educational system.

Table 3
Mean Performances of the Students in Mathematics
Before and After the Intervention

	Mean Performance	Mean Percentage Score	Level of Proficiency
Before they are Immersed in the Paradeigmath Class Wide Peer Tutoring and Explicit Teaching Intervention	**18.31**	37%	Low Proficient
After they are Immersed in the Paradeigmath Class Wide Peer Tutoring and Explicit Teaching Intervention	**29.62**	59%	Nearly Proficient

On the other hand, the group's mean performance of the students after they were immersed in the teaching intervention was 29.62 or 59% (Nearly Proficient). It can be noted there is an increase in the mean performance of the students after the conduct of the intervention.

2. Significant Difference Between the Performances of the Grade 9 Students Before and After they are Immersed in Paradeigmath Class Wide Peer Tutoring And Explicit Teaching Intervention

One-tailed z-test statistic was used to test the hypothesis at 0.05 level of significance. The null hypothesis is that there is no significant difference between the mean performance of the students in pre-test and post-test. It will be rejected if p-value < 0.05, otherwise, there is no significant difference between the mean performances of the students in pre-test and post-test. As reflected in table 7, the null hypothesis was rejected since $0.00000000257 < 0.05$, therefore, the mean performance of the students in the post-test is significantly higher than their mean performance in pre-test.

Table 4
Test of Significant Difference on the Mean Performances
In Mathematics Before and After the Intervention

H_0: $m_1 = m_2$	**Before they are Immersed in the Paradeigmath Class Wide Peer Tutoring and Explicit Teaching Intervention**	**After they are Immersed in the Paradeigmath Class Wide Peer Tutoring and Explicit Teaching Intervention**
Mean Performance	18.31	29.62
Number of Students	32	32
Variance	55.47	64.30
$p - value$	**0.00000000257**	
Decision	Reject the null hypothesis	

H_0: There is no significant difference between the mean performance of the students in pre-test and post-test.

Furthermore, this shows that when the students were exposed to the intervention program, their mean performance in the summative test significantly improved. These results took the researcher to another perspective of the importance of mastering first the pre-requisite skills and fundamental skills for students to have higher chance to learn and master higher forms of learning. It is a disservice to the students if teachers proceed to complex competencies without helping them acquire basic skills. Providing them with age-appropriate scaffolding and intervention will make a difference.

3. Attitude Towards Mathematics of the Grade 9 Students Before and After they are Immersed in Paradeigmath Class Wide Peer Tutoring and Explicit Teaching Intervention

Table 4 shows the attitudes before and after they are Immersed in Paradeigmath Class Wide Peer Tutoring and Explicit Teaching Intervention. As shown, the over-all weighted mean of the attitude towards Mathematics of the students before the intervention is x= 4.49 or 4, interpreted as “agree”. This over-all attitude towards mathematics was already positive but one of the goals of the

intervention program was to improve this attitude to “strongly agree” or “very strongly agree”.

Table 5
Summary and Comparison of the Pre-Attitudes and Post-Attitudes towards Mathematics of the Students

ATTITUDES	PRE- ATTITUDES			POST- ATTITUDES		
	WM	**QNR**	**QLR**	**WM**	**QNR**	**QLR**
1) I am happier in a math class than in any other class.	4.93	5	**SA**	5.57	6	**VSA**
2) Mathematics is hard for me.	(3.63) 3.58	4	**A**	(3.21) 3.78	3	**D**
3) I am interested and willing to acquire more knowledge in mathematics.	5.85	6	**VSA**	5.18	5	**SA**
4) *Mathematics will not be important in my life’s work.	(1.82) 5.18	2	**SD**	(2.27) 4.72	2	**SD**
5) I like Mathematics.	5.15	5	**SA**	5.30	5	**SA**
6) *Mathematics makes me feel uncomfortable, restless, irritable, and impatient.	(2.78) 4.42	3	**D**	(2.97) 4.03	3	**D**
7) *I easily give up when I cannot solve mathematics problem.	(2.82)3 .48	3	**D**	(2.6.4) 4.36	3	**D**
8) *I feel I don’t have a good foundation in Mathematics.	(3.54) 3.45	4	**A**	(3.21) 3.79	3	**D**
9) I want to gain more knowledge in mathematics.	5.42	5	**SA**	5.24	5	**SA**
10) *I need someone to guide in solving problems because it confuses me.	(4.64) 2.36	5	**SA**	(3.812)3 .18	4	**A**
11) I can get good grades in mathematics.	4.58	5	**SA**	4.55	5	**SA**
12) *I don’t see any application of what are being taught in mathematics subjects in day-to-day living.	(2.30) 4.70	2	**SD**	(2.30) 4.70	2	**SD**
13) I study mathematics because I know how useful it is.	5.15	5	**SA**	5.30	5	**SA**
14) I believe that if I work long enough on a mathematics problem, I will be able to solve it.	4.97	5	**SA**	5.00	5	**SA**
15) Mathematics classes provide opportunity to learn values that are useful in other parts of daily living.	5	5	**SA**	5.21	5	**SA**
16) *Mathematical problems make me feel uneasy and confused.	(3.61)3 .39	4	**A**	(3.12) 3.88	3	**D**
17) I feel definite positive reaction to mathematics. It’s enjoyable.	4.79	5	**SA**	4.94	5	**SA**
18) Mathematics helps person to think logically.	4.70	5	**SA**	4.64	5	**SA**
19) I’ll need a good understanding of mathematics for my future work.	5.30	5	**SA**	5.33	5	**SA**
20) *Taking math is a waste of time.	(1.96) 5.03	2	**SD**	(1.84) 4.94	2	**SD**
21) *Doing well in math is not important for my future.	(2.06)4 .94	2	**SD**	(1.87) 5.12	2	**SD**
22) *I don’t expect to use much mathematics when I get out of school.	(2.03)4 .97	2	**SD**	(2.27) 4.72	2	**SD**
23) *My mind goes blank, and I am unable to think clearly when doing math.	(3.54) 3.45	4	**A**	(3.15) 3.85	3	**D**
24) I am able to solve mathematics problem without too much difficulty.	3.64	4	**A**	4.66	5	**SA**
25) *I don’t like working with numbers and symbols.	(2.57)3 .82	3	**D**	(2.18) 4.82	2	**SD**
OVERALL WEIGHTED MEAN	**4.49**	**4**	**A**	**4.67**	**5**	**SA**

The table also shows that the over-all weighted mean of the post-attitudes is x= 4.67 or 5 which can be interpreted as “strongly agree”. It can be noted that there is an increase in the attitudes towards mathematics of the students after the conduct of the intervention program.

One of the notable changes in the attitude is evident in the statement no. 1 *“I am happier in a math class than in any other class.”* which improved from *“strongly agree”* to “very strongly agree”. This means that students were much happier in mathematics class after exposing to the intervention.

Another notable improvement in attitude is evident in the statement no. 2 *“Mathematics is hard for me.”* which improved from “agree” to “disagree”. This means that the intervention helped alleviate the difficulties in mathematics of the students.

There is also an improvement in attitude towards statement no. 8 *“I feel I don’t have a good foundation in Mathematics.”* which changed from “agree” to “disagree”. This implies that the intervention helped the students to learn the basic lessons in algebra that they were not taught in distance learning.

It is also important to note that the students remained “strongly disagree” in the statement mo. 12 *“I don’t see any application of what are being taught in mathematics subjects in day-to-day living.”* before and after the intervention. This is a good indication that students strongly disagreed that mathematics has no real-life applications.

There is also a notable change in the attitude of the students towards statement no. 16 *“Mathematical problems make me feel uneasy and confused.”*

which changed from “agree” to “disagree”. This means that through the help of the intervention, students were able to view mathematics positively.

4. **Significant Difference Between the Attitudes of the Grade 9 Students Before and After they are Immersed in Paradeigmath Class Wide Peer Tutoring and Explicit Teaching Intervention**

Table 5 shows the test of difference between the attitudes of the tutors and the tutees. The null hypothesis is that there is no significant difference between the attitudes of the tutors and the tutees. It will be rejected if the computed value is $<$ 0.05, otherwise, there is no significant difference between the attitudes of the tutors and the tutees.

Table 6

Test of Significant Difference on the Attitudes towards Mathematics of the Tutors and the Tutees

Mean	4.49	4.6724
Variance	0.718642	0.375236
Observations	25	25
Hypothesized Mean Difference	0	
df	24	
t Stat	-2.06381	
P(T<=t) one-tail	**0.025005**	
t Critical one-tail	1.710882	

H_0: There is no significant difference between the pre-attitude and post-attitude of the students.

Since the computed value 0.025005 < 0.05, the decision is to reject the null hypothesis. Therefore, there is a significant different between the pre-attitude and post-attitude towards mathematics of the students.

This validates the claim of Ali, Anwer, & Abas (2015) that peer-tutoring is an enjoyable way of learning. Furthermore, the National Tutors Association

asserted that peer-tutoring improves the attitudes of the students towards the subject and school. Tudy (2014) studied the influence of attitude and self-efficacy towards academic performance in Mathematics for Grade 8 students. It was also discovered that only attitude towards Mathematics manifested significant influence to academic performance. Students who have shown positive attitude towards the subject tend to perform well. Abdelkarim, Abuiyada, & Ali (2016) investigated the undergraduate students' attitude towards mathematics after peer teaching experience. The study showed that there was a statistically significant difference in the attitude towards mathematics attributed to the peer teaching strategy.

Building community of learners helping one another to learn is crucial nowadays. We need to rebuild relationships and camaraderie among our students who have been losing connections due to the advent of technology.

Experts in education believe that we are now entering Industrial Revolution 5.0 which demands for Education 5.0. In this era of technology and 21st Century, they believe that there is a need to humanize education. One way of humanizing education is to promote strategies, activities, and programs that advocate for collaboration, cooperation, and communication.

With the positive results of this research, the researcher is more convinced that his practice must be sustained and emulated by other teachers. As a mathematics teacher, the researcher is also excited to extend the coverage of his practice to other learning competencies and mathematics and also explore other types of tutoring.

5. Lived Experiences of the Tutors and Tutees in the Peer-Tutoring Activity

The experiences of the tutors and the tutees were also explored in this research. Table 6 shows the summary of responses of the tutors during the interview and observation conducted.

Table 7

Thematic Analysis of Insights Drawn from the Experiences of Tutors

Theme	Codes	Descriptions
Attitudes towards tutoring	Happiness Sense of Pride Fulfillment Sense of service Sense of responsibility Mastery of the lessons Transformation to positive mindset	*Attitudes refer to the general thinking or feeling of the tutors towards tutoring.*
Techniques/ Mechanisms	Giving of more examples and various scenarios Step-by-step procedure Use of story telling Words of affirmation Relating the topics to real-life concepts Gradual explanation Repetition and drills Giving clear instructions Listening Review technique	*Techniques or mechanisms refer to specific ways or steps used by the tutors during the tutoring.*
Challenges	Lack of communication Impatience Lessons were challenging Shyness Self-doubt Out of focus of the tutees	*Challenges refer to the hindrances encountered by the tutors during the tutoring activity.*
Inputs for improvement	Constant feedbacking Make tutoring program as one teaching load More games should be included Various examples	*Inputs for improvement refer to the needs and suggestions by the tutors for the betterment of the program*.

During the interview, among the leading themes is the “attitude towards tutoring”. Under this is “happiness” and “sense of pride”. The tutors divulged that they were extremely happy knowing that they were able to lend help to their respective tutees. In fact, one of the tutors said *“Maganda sa pakiramdam ang nakakatulong sa iba, Sobrang saya ko.”* (*“It’s fulfilling to help my tutee understand*

the topic. I'm extremely happy.") Another tutor also expressed his gladness, *"Naka-proud na nakikita mo yung tutees na kahit papano ay nakakasunod sa itinuturo mo." ("It's a proud moment for me witnessing my tutee finally understood what I am teaching him."*

Another is "sense of service" and "sense of responsibility". One tutor said, (*"Ang pagiging tutor ay isang malaking reponsibilidad at oportunidad na makpagbahagi ng aking kaalaman at kasanayan sa iba.") "Being a tutor is a huge responsibility and also an opportunity for me to share my knowledge and skills to others."* Another one uttered *"Maganda sa pakiramdam dahil hindi lang sarili mo ang natutulungan mo pati na rin ang iba."* (*"It's really fulfilling because I am not only helping myself but others as well.")*

In terms of "techniques and mechanisms" used during tutoring, leading among them is "giving of more examples and various scenarios". One tutor expressed her thoughts about this *"Nagbibigay ako ng maraming examples at hindi ako umaalis sa lesson na yun hangga't 'di nya pa nakukuha." ("I am giving more, and varied examples and I am not proceeding to the next lesson until he finally understood what I am teaching.")*

Providing "step by step procedure" also worked during the peer-tutoring according to the tutors. One tutor claimed that *"Nagbibigay ako ng examples na step-by-step at inuulit-ulit."* (*"I am providing more examples with step-by-step procedure, and I repeat the process.")*

In terms of challenges met by the tutors during the tutoring there were “lack of communication”, “tutors became impatient at times”, “lessons were challenging”, and “self-doubt”.

During the conduct of the intervention, the experiences of the tutees were also considered. Table 7 shows the summary of responses of the tutees during the interview and observation conducted.

Table 8

Thematic Analysis of Insights Drawn from the Experiences of Tutees

Theme	Codes	Descriptions
Attitudes towards tutoring	Happiness More learning Learning has been more fun and easier.	*Attitudes refer to the general thinking or feeling of the tutees towards tutoring.*
Techniques/ Mechanisms	Words of affirmation Relating the topics to real-life concepts Gradual explanation Giving of more examples and various scenarios Step-by-step procedure Repetition and drills Giving clear instructions Listen and don’t pressure Review technique	*Techniques or mechanisms refer to specific ways or steps used by the tutors during the tutoring as perceived by the tutees.*
Benefits	Big help Huge assistance	*Benefits refer to the advantages of tutoring as perceived by the tutees.*
Inputs for improvement	Constant feedbacking Make tutoring program as one teaching load More games should be included Various examples	*Inputs for improvement refer to the needs and suggestions by the tutees for the betterment of the program*.

Tutees have expressed their “attitudes towards tutoring” citing that they experienced “happiness”, “more learning”, and “learning has been more fun and easier”. These three are interconnected emotions experienced by the tutees all throughout the conduct of intervention. One tutor said, *“Masaya po dahil yung tutor ko ay mahusay magturo”. (“I am happy because my tutor is good in tutoring.”)* Another one shared *Masaya ako dahil kahit papaano ay napadali para sa akin ang*

math dahil naiintindihan ko ito." ("I am happy because my tutor is so facilitative, and I am able to understand the lessons in mathematics.") Moreover, another notable response of the tutee is *Kung wala ang tutor ko, baka mahirapan akong maka-grade 10." ("Without my tutor, I think, it would be hard for me to advance to the next grade level.")*

Among the responses that emerged in terms of the "techniques/ mechanisms used by the tutors" were "words of affirmation", "relating the topics to real-life concepts", "giving more explanations", and "step-by-step procedure".

The tutees also mentioned that their participation to the peer-tutoring intervention was "big help" and provided them with "huge assistance".

In the light of the results discussed, the following recommendations are forwarded:

1. It is recommended that other mathematics teachers adopt and/ or improve the design of the intervention program introduced in this research to cater other learning competencies.

2. It is recommended that teachers from other learning areas also explore other types or forms of peer-tutoring.

3. It is recommended that teachers also explore other strategies and techniques that can be combined with peer-tutoring and explicit teaching.

4. It is recommended for interested teacher-researchers to develop standard tutoring materials that will cater to specific learning competencies.

VI. PLANS FOR DISSEMINATION AND ADVOCACY

A. CONTEXT

PROGRAM TITLE	IMPLEMENTATION OF LESSON STUDY PROGRAM & KUMUSTAHAN SA SIPNAYAN AS PLATFORM FOR DISSEMINATION AND ADVOCACY
Name of Proponent	ZOREN I. AÑONUEVO
School	Baras Rural Development High School
Describe current situation (problem or opportunity) in your division/ district that you need to address through your project	Teacher professional learning is becoming popular as a crucial mean to nurture the complex skills students need to learn to succeed in the 21st century. Sophisticated forms of teaching are needed to develop student competencies such as deep mastery of challenging content, critical thinking, complex problem solving, effective communication and collaboration, and self-direction. To realize these, effective professional development (PD) is needed to help teachers learn and refine the instructional strategies required to teach these skills (Hammond, & Espinoza, 2017). The school itself is the best avenue to develop and nurture the competence of the teachers. Building circle of professionals who collaborate and empower each other has great impact to their clienteles. The quality of teaching-learning depends to a very great extent on the kind of teachers that teach. Like any other professional, teachers are bound to embrace continuing professional development to remain relevant in the classrooms. The more common way of continuing professional development (CPD) that teachers adopt is attendance in seminars or workshops. But there is another less expensive but more effective ways of CPD, that of building professional learning communities (PLC) right there in schools where teachers teach like this Lesson Study program. Critical thinking and problem solving are the twin goals of the K to 12 Curriculum along Mathematics education. However, these goals cannot be achieved without addressing the problems and issues on numeracy level of the Mathematics learners. Numeracy is the gateway to understanding higher concepts in Mathematics. Non-numeracy among learners has long been impeding the teachers from making the teaching-learning process progressive since the basic of Mathematics is not yet mastered. Through the Lesson Study program, hopes are reignited that Mathematics teachers and facilitators would be given new avenue to spearhead new innovations in teaching the subject and more collaborations would blossom among schools in order to address the perennial problem on numeracy.
Project objective/s: SMART: Specific, Measurable, Attainable, Result-oriented, and with Time Frame	The specific objectives of the program are to: 1. Enhance pedagogical skills of the teachers in teaching; 2. Establish and sustained community of practice among teachers; 3. Disseminate the results of the present research
Identify success indicators or measures of success	• Sustained community of practice among schools • Improved pedagogical skills of teachers

B. TRAINING DESIGN FOR SCHOOL-BASED LEARNING ACTION CELL

Sessions	Objectives for The Participants	Key Concepts/ Messages/ Topics	Methodology Activities Procedure	Materials/ Resources	Duration
Session 1: Discussion on the Different Types of Peer-Tutoring	To orient the teachers on the various types of peer-tutoring	Salient Points of Peer-Tutoring	Lecture	Laptop Projector Bond Paper	2 hours
Session 2: Discussion on the Benefits of Explicit Teaching	To familiarize with the various key concepts of Explicit Teaching	Key Concepts of Explicit Teaching	Lecture	Laptop Projector Bond Paper	2 hours
Session 3: Differentiating Peer-Tutoring Program	To provide teachers the idea on how to create their own contextualized Peer-Tutoring program	Crafting of Peer-Tutoring Program Proposal	Lecture Break-out Session	Laptop Projector Bond Paper	3 hours
Session 4: Integrating Peer-Tutoring in the Lesson Study Program	To plan for integrating peer-tutoring as one of the strategies in Lesson Study Program	Lesson Study Planning	Break-out Session	Laptop Projector Bond Paper	3 hours

VII. Financial Report

Activity	Cash-out	Balance
Basic Education Research Fund (BERF)		**15,000**
Supplies for tutoring materials for various activities	Php, 3,041	11,959
Supplies given during the conduct of Intervention	Php. 6,228	5,731
Snacks for the tutors during the enrichment activity	Php. 1186	4,545
Supplies for the tutors & tutees	Php. 900	3,645
Certificates and tokens for tutors during awarding	Php. 175	3,470
Printing and Binding of Final Manuscript	Php 2,000	1,470
Other expenses	Php. 82	1,388
Transportation	Php. 500	888
Dissemination	Php. 888	0

VIII. References

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ANNEXES

Republic of the Philippines
Department of Education
REGION V - BICOL

Office of the Assistant Regional Director

October 13, 2023

ZOREN I. ANOÑUEVO
Master Teacher I
Bara Rural Development High School
Baras, Catanduanes

Dear Mr. Anoñuevo:

This refers to the research proposal duly approved by the Schools Division Research Committee (SDRC) which was favorably submitted to this Office for possible funding under the CY 2024 Basic Education Research Fund (BERF) Grant Facility.

This Office, through the Regional Research Committee (RRC), is pleased to inform you that the research proposal entitled **"IMPROVING THE PERFROMANCE AND ATTITUDES OF GRADE 7 STUDENTS IN MATHEMATICS AT BARAS RURAL DEVELOPMENT HIGH SCHOOL THROUGH PARADEIGHMATH: A CLASSWIDE PEER TUTORING AND EXPLICIT TEACHING INTERVENTION".** has been **approved** for implementation following the provisions provided for under DepEd Order No. 16, s. 2017.

In this regard, the processing of tranches for the BERF Facility funding and its deliverables is shown in the table below and shall serve as liquidation documents:

TYPE OF RESEARCH	TRANCHE	PERCENTAGE	DELIVERABLES
ACTION RESEARCH	FIRST TRANCHE	80 %	• Work Plan • Certificate of Acceptance for the Deliverable • Copy of MOA
	LAST TRANCHE	20 %	• Final Report • Certificate of Acceptance from Regional Research Committee (RRC) • Copy of MOA

Kindly take note that in the event that the research proponent failed to complete and submit the deliverables as scheduled, the research proponent shall be required to return the amount granted in full through direct payment or salary deduction within six (6) months.

Further, strict adherence to the provisions of DepEd Order No. 16, s. 2017 dated March 20, 2017 is hereby directed.

For questions and further clarifications, please coordinate with the Regional Research Committee through the Policy, Planning, and Research Division (PPRD).

We look forward to the successful implementation of your research. Thank you.

Very truly yours,

BEBIANO I. SENTILLAS
Assistant Regional Director
Chair, Regional Research Committee

PPRD/hrm
10/13/23

Regional Center Site, Rawis, Legazpi City 4500
0969 516 9555
region5@deped.gov.ph

DECLARATION OF ANTI-PLAGIARISM

1. I, ZOREN I. AÑONUEVO, understand that Plagiarism is the act of taking and using another's ideas and works and passing them off as one's own. This includes explicitly copying the whole work of another person and/or using some parts of their work without proper acknowledgement and referencing.

2. I hereby attest to the originality of this research proposal and has cited properly all the references used. I further commit that all deliverables and the final research study emanating from this proposal shall be of original content. I shall use appropriate citations in referencing other works from various sources.

3. I understand that violation from this declaration and commitment shall be subject to consequences and shall be dealt with accordingly by the Department of Education and _____ (insert grant mechanism).

PROPONENT: ZOREN I. AÑONUEVO

SIGNATURE: _____

DATE: _____

DECLARATION OF ABSENCE OF CONFLICT OF INTEREST

1. I, ZOREN I. AÑONUEVO, understand that conflict of interest refers to the situations in which financial or other personal considerations may compromise my judgement in evaluating, conducting or reporting research.[1]

2. I hereby declare that I do not have any personal conflict of interest that may arise from my application and submission of my research proposal. I understand that my research proposal may be returned to me if found out that there is conflict of interest during the initial screening as per DepEd Order No. 16, s. 2017.

3. Further, in case of any form of conflict of interest, (possible or actual) which may inadvertently emerge during the conduct of my research, I will duly report it to the research committee for immediate action.

4. I understand that I may be held accountable by the Department of Education and _____ (insert grant mechanism) for any conflict of interest which I have intentionally concealed.

PROPONENT: ZOREN I. AÑONUEVO

SIGNATURE: _____

DATE: _____

	PRE-TEST	POST-TEST
X1	33	39
X2	32	37
X3	31	36
X4	29	40
X5	28	37
X6	27	30
X7	24	40
X8	22	34
X9	20	27
X10	18	40
X11	18	31
X12	17	39
X13	16	36
X14	11	42
X15	27	31
X16	24	22
X17	21	21
X18	18	20
X19	17	27
X20	17	27
X21	16	30
X22	15	15
X23	15	36
X24	10	36
X25	10	27
X26	10	16
X27	10	24
X28	8	19
X29	7	28
X30	16	26
X31	10	16
X32	9	19
	586	948
variance	55.46484	64.29688

z-Test: Two Sample for Means			z-Test: Two Sample for Means
Mean	17.83870968	29.32258	Mean
Known Variance	55.47	64.3	Known Variance
Observations	32	32	Observations
Hypothesized Mean	0		Hypothesized Mean Difference
z	-5.84245164007		z
P(Z<=z) one-tail	0.00000000257		P(Z<=z) one-tail
z Critical one-tail	1.64485362695		z Critical one-tail
P(Z<=z) two-tail	0.00000000514		P(Z<=z) two-tail
z Critical two-tail	1.95996398454		z Critical two-tail

PRE	POST
4.93	5.57
3.58	3.78
5.85	5.18
5.18	4.72
5.15	5.3
4.42	4.03
3.48	4.36
3.45	3.79
5.42	5.24
2.36	3.18
4.58	4.55
4.7	4.7
5.15	5.3
4.97	5
5	5.21
3.39	3.88
4.79	4.94
4.7	4.64
5.3	5.33
5.03	4.94
4.94	5.12
4.97	4.72
3.45	3.85
3.64	4.66
3.82	4.82
112.25	116.81
4.49	4.6724

t-Test: Paired Two Sample for Means

Mean	4.49	4.6724
Variance	0.718642	0.375236
Observations	25	25
Pearson Correlation	0.865223	
Hypothesized Mean Difference	0	
df	24	
t Stat	-2.06381	
P(T<=t) one-tail	0.025005	
t Critical one-tail	1.710882	
P(T<=t) two-tail	0.050009	
t Critical two-tail	2.063899	

Republic of the Philippines
Department of Education
REGION V
SCHOOLS DIVISION OFFICE OF CATANDUANES
BARAS RURAL DEVELOPMENT HIGH SCHOOL

Interview guide for tutors

1) What do you feel when you teach your tutees?
2) What strategies or techniques did you use when you use when your tutees find difficulty?
3) What do you consider the most effective way of teaching your tutees?
4) What do you feel when your tutees are able to follow you?
5) What challenges did you encounter in tutoring?
6) Which aspect of the tutoring program needs improvement?

Interview guide for tutees

1) What do you feel when your tutor teaches you?
2) What did your tutor do when you were having difficulties with the lessons?
3) How did your tutor help you with the lessons?
4) How does it fell to be a tutee?
5) How helpful your tutor was?
6) Which aspect of the tutoring program needs improvement?

ATTITUDES TOWARDS MATHEMATICS

Directions: Each statement expresses a feeling that a particular person has toward mathematics. There is no right or wrong answers. You are to express on a 6-point scale, the extent of agreement between the feeling expressed in each statement and your own personal feeling.

ATTITUDES	VSA (6)	SA (5)	A (4)	D (3)	SD (2)	VSD (1)
1. I am happier in a math class than in any other class.						
2. Mathematics is hard for me.						
3. I am interested and willing to acquire more knowledge in mathematics.						
4. Mathematics will not be important in my life's work.						
5. I like Mathematics.						
6. Mathematics makes me feel uncomfortable, restless, irritable, and impatient.						
7. I easily give up when I cannot solve mathematics problem.						
8. I feel I don't have a good foundation in Mathematics.						
9. I want to gain more knowledge in mathematics.						
10. I need someone to guide in solving problems because it confuses me.						
11. I can get good grades in mathematics.						

12. I don't see any application of what are being taught in mathematics subjects in day-to-day living.							
13. I study mathematics because I know how useful it is.							
14. I believed that if I work long enough on a mathematics problem, I will be able to solve it.							
15. Mathematics classes provide opportunity to learn values that are useful in other parts of daily living.							
16. Mathematical problems make me feel uneasy and confused.							
17. I feel definite positive reaction to mathematics. It's enjoyable.							
18. Mathematics helps person to think logically.							
19. I'll need a good understanding of mathematics for my future work.							
20. Taking math is a waste of time.							
21. Doing well in math is not important for my future.							
22. I don't expect to use much mathematics when I get out of school.							
23. My mind goes blank, and I am unable to think clearly when doing math.							
24. I am able to solve mathematics problem without too much difficulty.							
25. I don't like working with numbers and symbols.							

PRE-TEST

Directions: Read and analyze carefully each question. Write the letter of the correct answer on your answer sheet.

1) Translate: $\frac{a^2}{b^3}$

   a. the quotient of a and b
   b. the ratio of a and the cube of b
   c. the quotient of the square of a and b
   d. the quotient of the square of a and the cube of b

2) Which of the following is the correct translation of $x^2 + 4$?

   a. the sum of x and four
   b. the sum of the square of x and four
   c. the difference of x and four
   d. the difference of the square of x and four

3) In the expression a^n, which of the following is true?

   a. *n* refers to the number of times the base *a* will be divided by itself.
   b. *a* refers to the number of times the base *n* will be divided by itself.
   c. *n* refers to the number of times the base *a* will be multiplied to itself.
   d. *a* refers to the number of times the base *n* will be multiplied to itself.

4) In the expression 5a – b, what do you call 'a' and 'b'?

   a. constants b. coefficients c. variables d. exponents

5) Considering the expression 2x + 8, which of the following is true?

   a. 2 and 8 are called 'variables'.
   b. x is called 'coefficient'.

c. 2 and x are variables.

d. x is called variable.

6) What is the value of $2x - 5$ if $x = 4$?

a. -3 b. 3 c. -13 d. 13

7) What is the value of $4c + 6$ if $c = 8$?

a. 18 b. 38 c. -18 d. -38

8) What is the value of the expression $\frac{y+12}{y}$ if 'y' will be replaced by 3?

a. 2 b. 3 c. 4 d. 5

9) Which of the following is true about the polynomial $-4x^5 + 7x^3 - 14x$?

a. It has 5 terms and the highest exponent is 3.

b. It has 3 terms and the highest exponent is 5.

c. It has 2 terms and the highest exponent is 5.

d. It has 1 term and the highest exponent is 3.

10) What type of polynomial is the polynomial $-4x^5 + 7x^3 - 14x$?

a. monomial; quadratic c. trinomial; quintic

b. trinomial; quartic d. binomial; cubic

11) Find the sum of $4x + 5y$ and $-9x + 7y$

a. $-13x + 12y$ b. $13x + 12y$ c. $-5x + 12y$ d. $5x + 12y$

12) Add (-12x + 8y) and (-5x + 9y):

a. -17x + 17y b. 17x + 17y c. 7x-17y d. -7x – 17y

13) Find the sum (8x + 4) + (-11x + 5)

a. a) 19x + 9 b) 12x - 6 c) 6x d) -3x + 9

14) Add the polynomials: (9 x - 6) + (- 5x + 7)

a. 14x + 1 b. -4x - 1 c. 4x + 1 d. 4x + 13

15) What is the difference when (-18x + 8y + 10z) is subtracted by (2x +4y +5z)?

a. 20x + 4y + 5z b. -20x + 4y + 5z c. 20x+ 12y + 5z d. -20x-12y + 5z

16) Simplify $(x)^8(x)(x)^2$

a. x^8 b. x^9 c.x^{10} d.x^{11}

17) $(jk)^{-5}(jk)^3 =$

a. $(jk)^{-2}$ b. $(jk)^{-8}$ c. $(2jk)^{-2}$ d. $(2jk)^{-8}$

18) $\left(\frac{2}{3}\right)^4 =$

a. $\frac{8}{81}$ b. $\frac{16}{81}$ c. $\frac{8}{3}$ d. $\frac{16}{3}$

19) $\frac{4^2 \bullet 3^5 \bullet 2^4}{4^3 \bullet 3^5 \bullet 2^2} =$

a. $\frac{4}{2}$ b. $\frac{3}{2}$ c. 1 d. $\frac{1}{2}$

20) $\frac{32\,a^6 \bullet b^7}{4\,a^2 \bullet b^5} =$

a. $9a^4b^2$ b. $8a^8b^{12}$ c. $8a^4b^2$ d. $9a^{12}b^3$

21) Find the product of $2x^3$ and $-2x^7-7$

a. $-4x^{10}-14x^3$ b. $4x^{10}-14x^3$ c. $-4x^{10}+14x^3$ d. $4x^{10}+14x^3$

22) What is the product when (2x-6) is multiplied by (x + 11)?

a. $x^2-66x+16$ b. $x^2+16x+11$ c. $2x^2+16x-66$ d. $2x^2+11x-66$

23) Find the quotient: $\frac{8x^8-8x^2-28x}{4x}$

a. $2x^8-8x^2-28x$ b. $2x^8-2x^2-2x$ c. $8x^7-8x-28$ d. $2x^7-2x-7$

24) Divide: $\frac{5x^4-5x^3+3x^2}{x^2}$

a. $5x^4-5x^3+3$ b. $5x^2-5x+3$ c. $5x^4-5x+3x^2$ d. $5x^2+5x+3$

25) Divide: $\frac{x^2+2x-63}{x+9}$

a. $x-7$ b. x^2-7 c. $x+7$ d. x^2+7

26) Find the quotient: $\frac{x^2-14x+45}{x-5}$

a. $x-9$ b. $x+5$ c. $9-x$ d. $x+9$

27) Find the product: (x-1)(x+3):

a. x^2-2x+3 b. x^2+2x-3 c. x^2-2x-3 d. x^2+4x-3

28) Expand $(x+7)^2$

a. $x^2+7x+49$ b. $x^2+14x+14$ c. $x^2+14x+49$ d. x^2+49

29) Expand $(x-5)^2$

a. x^2-25 b. x^2+25 c. $x^2-10x+25$ d. $x^2+10x+25$

30) Find the product (2x+5)(2x-5):

a. $4x^2-10$ b. $4x^2-25$ c. $4x^2+10$ d. $4x^2+25$

31) Expand $(x-3)^3$

a. $x^3-9x^2+27x+27$
b. $x^3-9x^2+27x+27$
c. $x^3-9x^2+27x-27$
d. $x^3+9x^2+27x+27$

32) A sugar factory can produce $(4k^2-k+8)$ kg of sugar per day. After the factory had sold 2 machines, it could only produce $(k^2+11k+2)$ kg of sugar per day. How much less sugar does the factory produce per day? Express the answer in terms of k.

a. $3k^2 - 12k + 6$ c. $3k^2 + 12k + 6$
b. $3k^2 + 12k - 6$ d. $3k^2 - 12k - 6$

33) The area of a rectangle is given by the expression $2x^2 + 5x + 2$. If the width of the rectangle is given by the expression $2x+1$, find an expression for the length of the rectangle.
a. $x + 1$ b. $x+ 2$ c. $x+3$ d. $x+4$

34) Which of the following statements is FALSE?
a. $x + 4$ is an example of an algebraic expression.
b. $x + 4 = 6$ is an equation.
c. $x - 7$ is an equation.
d. $y - 4$ is not an equation.

35) Which of the following is the correct translation of the equation $4y + 2 = 6$?
a. Four times the number y more than two is equal to six.
b. Four times the number y less than two is equal to six.
c. Four times the number y decreased by two is equal to six.
d. Four times the number y increased by two is equal to six.

36) Translate into mathematical sentence: "Eleven more than the number x is ten."
a. $x + 11 = 10$
b. $11 + x = 10$
c. $x + 10 = 11$
d. $10 + x = 11$

37) Translate into mathematical sentence: "Thrice the number z diminished by four is nine."
a. $2z - 4 = 9$
b. $3z - 4 = 9$
c. $2z + 4 = 9$
d. $3z + 4 = 9$

38) Which of the following is the correct translation of "Five is one-half the number y less two."?
a. $5 = \frac{1}{2}y + 2$ b. $5 = \frac{1}{4}y - 2$ c. $5 = \frac{1}{4}y + 2$ d. $5 = \frac{1}{2}y - 2$

39) Which of the following is the correct translation of "The product of four and y is 20"?
a. $4 - y = 20$ b. $4 + y = 20$ c. $4 \div y = 20$ d. $4y = 20$

40) Which of the following statements best differentiates linear equation from linear inequality in one variable?
a. Linear equation can be solved algebraically while linear inequality cannot.
b. Linear equation uses the symbols $<, >, \geq$, and $\leq$ while linear inequality uses $=$ only.
c. In general, linear inequality has more number of solutions compared to that of linear equation.
d. The term linear equation and linear inequality can be used interchangeably.

41) Which of the following qualifies as a linear equation in one variable?
a. $m + 7$ b. $m - 2 < 6$ c. $m \geq 5$ d. $m + 3 = -10$

42) Solve the equation $5x + 6 = 16$.
a. $x=2$ b. $x=4$ c. $x=5$ d. $x=6$

43) Find the solution: $8z - 2z = -6$:
a. -1 b. 1 c. $\frac{3}{5}$ d. $\frac{-3}{5}$

44) Solve the equation $\frac{8x-4}{2} = 3x$
a. -2 b. 2 c. -3 d. 3

45) Calculate the x if $5x = -10 + 3x$
a. -4 b. 4 c. -5 d. 5

46) Find x if $3x - 9 = 3$
a. -4 b. 4 c. -5 d. 5

47) Solve: $|2x - 3| = 5$
a. {4,-1} b. {-4,-1} c. {4, 1} d. {-4,1}

48) Solve $|3x - 5| = 2$
a. {-1, 7/3} b. {1, -7/3} c. {1, 7/3} d. {-1, -7/3}

49) The sum of two numbers is 63. Three times the smaller number is 14 more than twice the larger number. Find the numbers.
a. 43 and 20 b. 33 and 30 c. 35 and 28 d. 38 and 25

50) The sum of two consecutive numbers is 263. Find the larger number.
a. 131 b. 132 c. 133 d. 134

VIRAC LUCKY SUPERMART
Concepcion, Virac, Catanduanes
Prop: Rosemarie L. Lorayes
VAT Reg. TIN: 948-418-274-000
CYBER POS 2400 S/N: CP-240004982
MIN:17020908554606076

Name. : SIR
Address: _____
TIN : _____

Term ID: 006 Trans No.: 0000810917

MAGIC CREAMS CHOCOLATE
4 @ 54.95 219.80 v
MAGIC FLAKES JR CHOCO 29.00 v
MILNEE POLVORON 20'S
5 @ 23.00 115.00 v
SUNREO COOKIES CHOCO 1 45.50 v
SUNREO COOKIES VANILLA
4 @ 45.50 182.00 v
SUNREO COOKIES VANILLA
3 @ 22.00 66.00 v
YAHOO PNUT BTTR SNDWCH 37.50 v

19 ITEM(S)
TOTAL: 694.80
CASH 1,000.00
CHANGE: 305.20

VATable (v) 620.36
VAT 74.44
Non-VAT (nv) 0.00
Vat Exempt 0.00
VAT Zero-Rated 0.00
Invoice No: 0000796397

CASHIER: MARY ROSE BALBUENA
BAGGER: JERO

SUPPLIER:
Cyber Frontier Electronics Trading
National Hiway, Paciano Rizal
Calamba, Laguna
TIN: 123-453-203-000
BIR Accr. No.: 056-123453203-000004311
Date Issued: 01/11/2005
PTUN: FP022017-069-0114152-00000
This serves as Official Receipt
RETURN/EXCHANGE: FIVE[5] DAYS FROM
DATE OF PURCHASED

Contact Nos.: 09476014575/09810358028
MAR 2,2024 11:25AM

ACC HYPERMART CORPORATION
GOGON SIRANGAN VIRAC, CATANDUANES, 4800
VAT REG TIN: 461-264-074-00000
SERIAL#: F9MOCS324589
PERMIT#: FP122018-069-0179046-00000
MIN: 18121910071216806

SALES INVOICE

SI# : 0000170391 TRX#: 0000170391
DATE : 03/07/2024 16:51:43 TERM#: 07
CASHIER: "SANTILLAN, EMIE JAIKA
BAGGER : EMIES

MAGIC CREAMS CHOCO 10'S FC6
6.000 @ 57.00 342.00V
OTSO VANILLA 10'S
3.000 @ 50.00 150.00V

9.000 ITEM(S) SUB-TOTAL: 492.00
AMOUNT DUE: 492.00
CASH 500.00
CHANGE: 8.00

VAT INFORMATION
VATable Sales 439.29
12% VAT Amount 52.71
VAT Exempt Sales 0.00
Zero-Rated Sales 0.00

CTN____ PLSTC____ BNDL____ FRZN____

CUSTOMER'S INFORMATION
NAME: ANNENEVI
ADDRESS: BARAS
TIN: \
BUSINESS STYLE: \

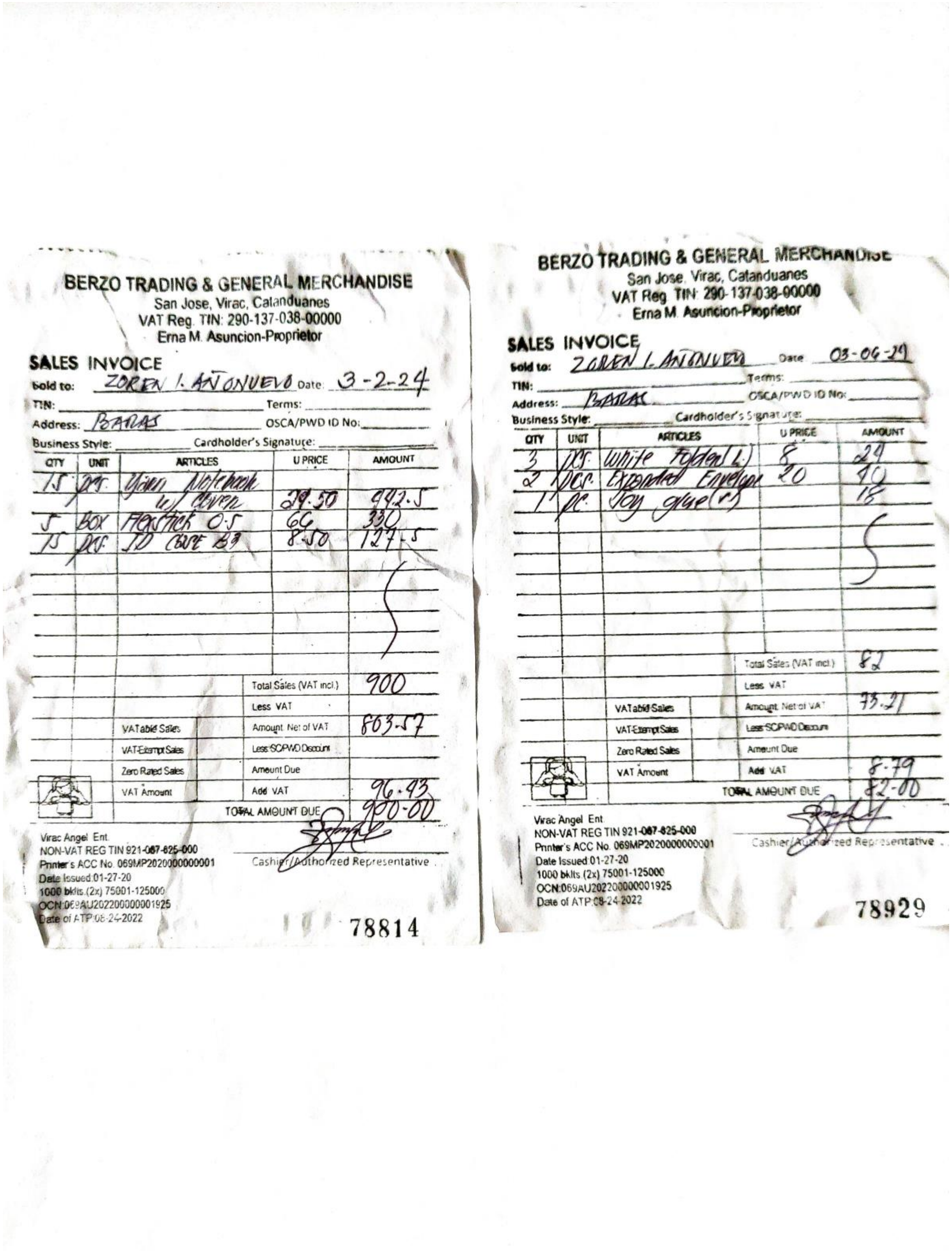
ACC RETAIL POINT OF SALES SYSTEM v1.0
OPERATED BY: TERESITA E. CUA
SAN ROQUE ST, BGY SAN ROQUE
SAN ANDRES, CATANDUANES
VAT REG TIN: 921-068-196-00000

ACCREDITATION#: 069921068196201703068 3
DATE ISSUED: 09/18/2018
VALID UNTIL: 12/31/2025
PTUN: FP122018-069-0179046-00000
DATE ISSUED: 12/21/2018

THIS SERVES AS YOUR SALES INVOICE

THANK YOU FOR SHOPPING AT
ACC HYPERMART CORPORATION
Ang supermarket ng bayan ko.

PLEASE PRESENT THIS INVOICE TO RETURN
AND/OR EXCHANGE ITEM(S)



BERZO TRADING & GENERAL MERCHANDISE
San Jose, Virac, Catanduanes
VAT Reg. TIN: 290-137-038-00000
Erna M. Asuncion-Proprietor

SALES INVOICE

Sold to: ZOREN I. AÑONUEVO Date: 3-2-24
TIN: Terms:
Address: BARAS OSCA/PWD ID No:
Business Style: Cardholder's Signature:

QTY	UNIT	ARTICLES	U PRICE	AMOUNT
15	pcs.	Yarn Notebook w/ cover	29.50	442.5
5	BOX	Flexstick 0.5	66	330
15	pcs.	ID Case B3	8.50	127.5

Total Sales (VAT incl.)	900
Less VAT	
Amount Net of VAT	803.57
Less SC/PWD Discount	
Amount Due	
Add VAT	96.43
TOTAL AMOUNT DUE	900.00

VATable Sales
VAT-Exempt Sales
Zero Rated Sales
VAT Amount

Virac Angel Ent.
NON-VAT REG TIN 921-087-825-000
Printer's ACC No. 069MP2020000000001
Date Issued 01-27-20
1000 bklts (2x) 75001-125000
OCN:069AU202200000001925
Date of ATP 08-24-2022

Cashier/Authorized Representative

78814

BERZO TRADING & GENERAL MERCHANDISE
San Jose, Virac, Catanduanes
VAT Reg. TIN: 290-137-038-00000
Erna M. Asuncion-Proprietor

SALES INVOICE

Sold to: ZOREN I. AÑONUEVO Date: 03-06-24
TIN: Terms:
Address: BARAS OSCA/PWD ID No:
Business Style: Cardholder's Signature:

QTY	UNIT	ARTICLES	U PRICE	AMOUNT
3	pcs.	White Folder (L)	8	24
2	pcs.	Expanded Envelope	20	40
1	pc.	Joy glue (S)		18

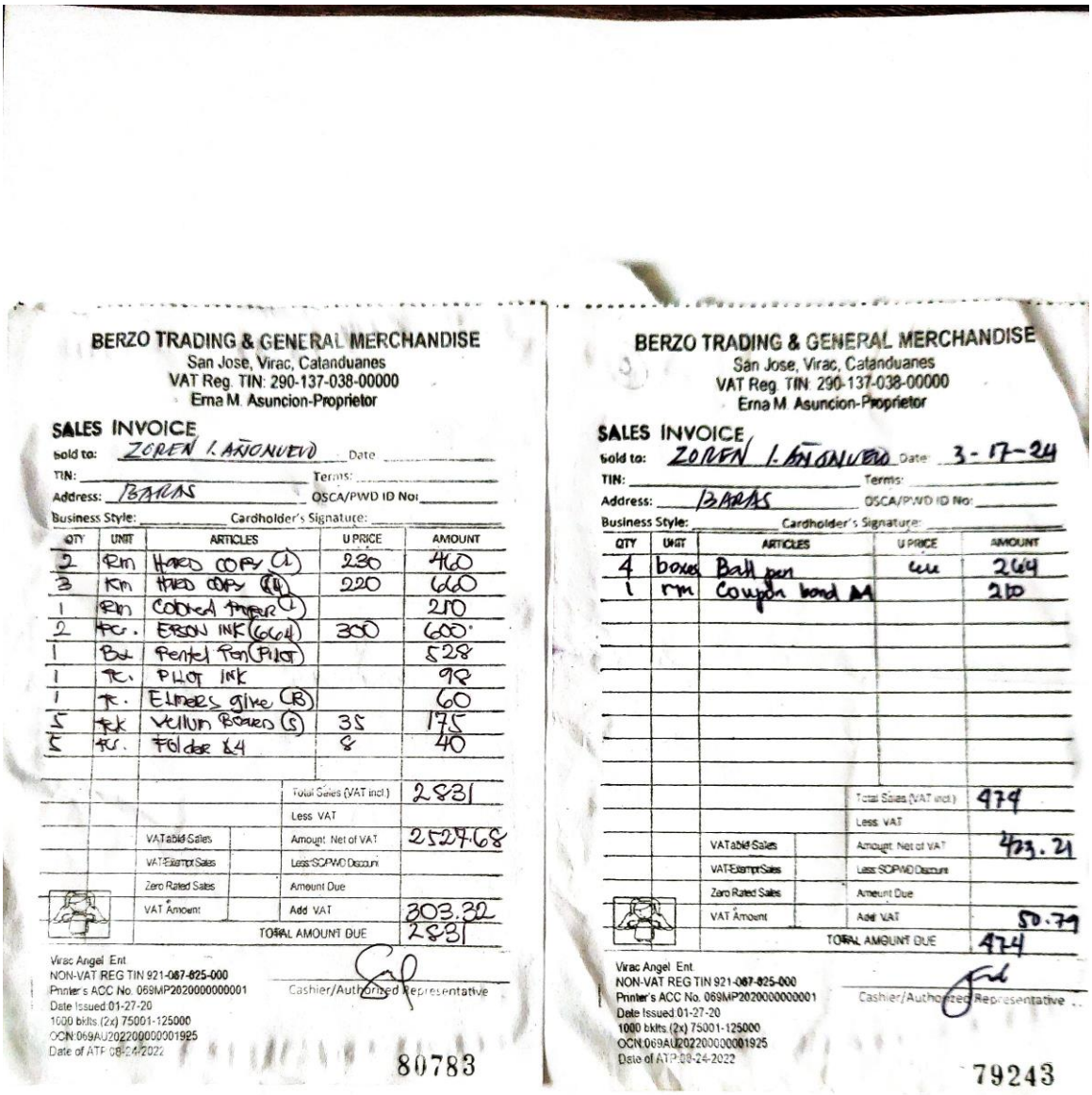
Total Sales (VAT incl.)	82
Less VAT	
Amount Net of VAT	73.21
Less SC/PWD Discount	
Amount Due	
Add VAT	8.79
TOTAL AMOUNT DUE	82.00

VATable Sales
VAT-Exempt Sales
Zero Rated Sales
VAT Amount

Virac Angel Ent.
NON-VAT REG TIN 921-087-825-000
Printer's ACC No. 069MP2020000000001
Date Issued 01-27-20
1000 bklts (2x) 75001-125000
OCN:069AU202200000001925
Date of ATP 08-24-2022

Cashier/Authorized Representative

78929



BERZO TRADING & GENERAL MERCHANDISE
San Jose, Virac, Catanduanes
VAT Reg. TIN: 290-137-038-00000
Erna M. Asuncion-Proprietor

SALES INVOICE

Sold to: ZOREN L. AÑONUEVO Date:
TIN: Terms:
Address: BARAS OSCA/PWD ID No:
Business Style: Cardholder's Signature:

QTY	UNIT	ARTICLES	U PRICE	AMOUNT
2	Rm	Hard copy (L)	230	460
3	Rm	Hard copy (LL)	220	660
1	Rm	Colored Paper (L)		210
2	Pc.	Epson INK (664)	300	600
1	Bx	Pentel Pen (Pilot)		528
1	Pc.	Pilot INK		98
1	Pc.	Elmers glue (B)		60
5	Pck	Vellum Boards (S)	35	175
5	Pc.	Folder L4	8	40

		Total Sales (VAT incl.)	2831
		Less VAT	
VATable Sales		Amount Net of VAT	252768
VAT-Exempt Sales		Less SC/PWD Discount	
Zero Rated Sales		Amount Due	
VAT Amount		Add VAT	303.32
		TOTAL AMOUNT DUE	2831

Virac Angel Ent
NON-VAT REG TIN 921-087-825-000
Printer's ACC No. 069MP2020000000001
Date Issued 01-27-20
1000 bklts (2x) 75001-125000
OCN 069AU202200000001925
Date of ATP 08-24-2022

Cashier/Authorized Representative

80783

BERZO TRADING & GENERAL MERCHANDISE
San Jose, Virac, Catanduanes
VAT Reg. TIN: 290-137-038-00000
Erna M. Asuncion-Proprietor

SALES INVOICE

Sold to: ZOREN L. AÑONUEVO Date: 3-17-24
TIN: Terms:
Address: BARAS OSCA/PWD ID No:
Business Style: Cardholder's Signature:

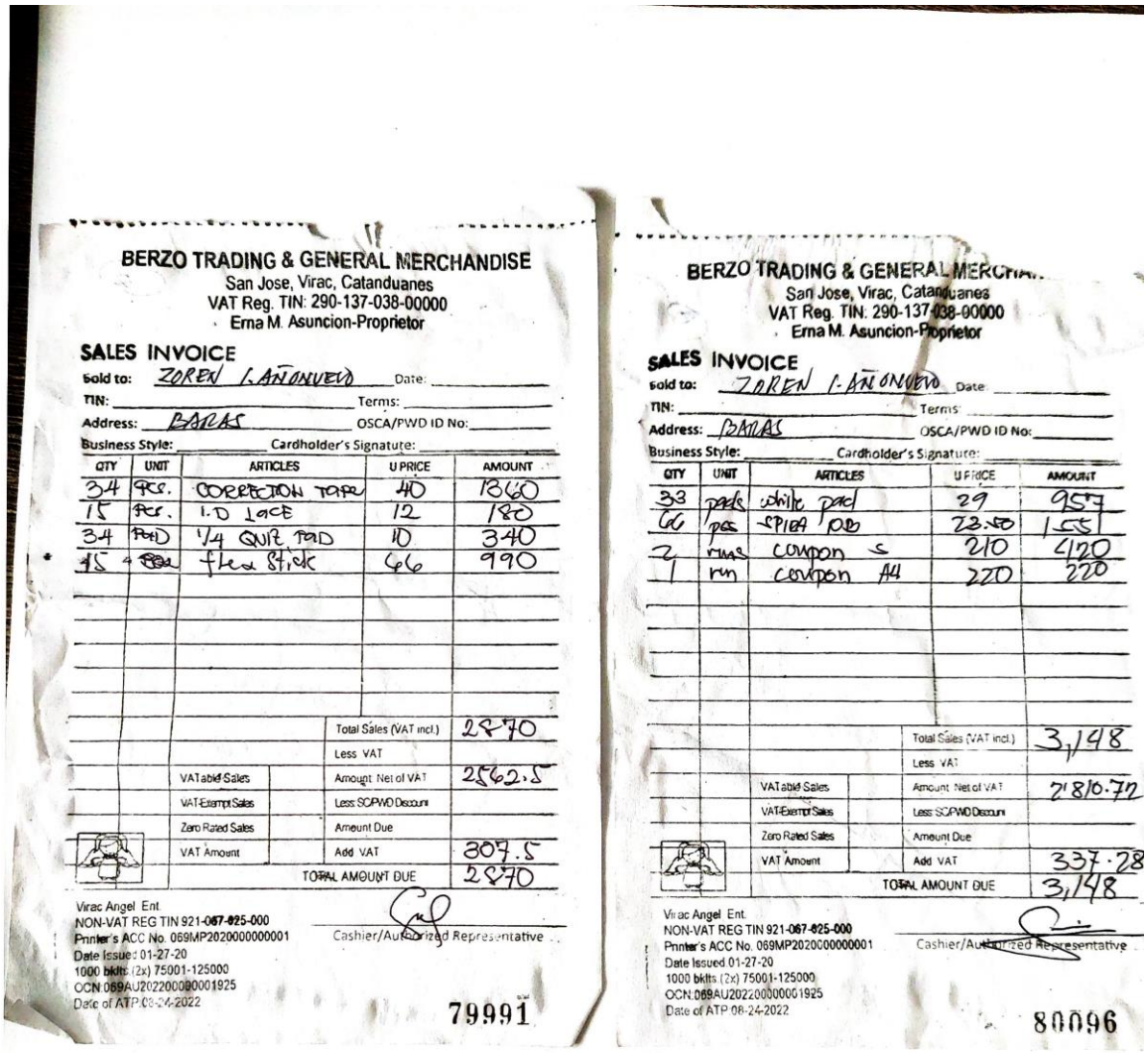
QTY	UNIT	ARTICLES	U PRICE	AMOUNT
4	boxes	Ball pen	66	264
1	rm	Coupon bond A4		210

		Total Sales (VAT incl.)	474
		Less VAT	
VATable Sales		Amount Net of VAT	423.21
VAT-Exempt Sales		Less SC/PWD Discount	
Zero Rated Sales		Amount Due	
VAT Amount		Add VAT	50.79
		TOTAL AMOUNT DUE	474

Virac Angel Ent
NON-VAT REG TIN 921-087-825-000
Printer's ACC No. 069MP2020000000001
Date Issued 01-27-20
1000 bklts (2x) 75001-125000
OCN 069AU202200000001925
Date of ATP 08-24-2022

Cashier/Authorized Representative

79243



BERZO TRADING & GENERAL MERCHANDISE
San Jose, Virac, Catanduanes
VAT Reg. TIN: 290-137-038-00000
Erna M. Asuncion-Proprietor

SALES INVOICE

Sold to: ZOREN L. AÑONUEVO Date:
TIN: Terms:
Address: BARAS OSCA/PWD ID No:
Business Style: Cardholder's Signature:

QTY	UNIT	ARTICLES	U PRICE	AMOUNT
34	PCS.	CORRECTION TAPE	40	1360
15	PCS.	I.D LACE	12	180
34	PAD	1/4 QUIZ PAD	10	340
15	PCS	flex stick	66	990

		Total Sales (VAT incl.)	2870
		Less VAT	
VATable Sales		Amount Net of VAT	2562.5
VAT-Exempt Sales		Less SC/PWD Discount	
Zero Rated Sales		Amount Due	
VAT Amount		Add VAT	307.5
		TOTAL AMOUNT DUE	2870

Virac Angel Ent.
NON-VAT REG TIN 921-067-025-000
Printer's ACC No. 069MP2020000000001
Date Issued 01-27-20
1000 bklts (2x) 75001-125000
OCN 069AU202200000001925
Date of ATP 08-24-2022

Cashier/Authorized Representative

79991

BERZO TRADING & GENERAL MERCHA...
San Jose, Virac, Catanduanes
VAT Reg. TIN: 290-137-038-00000
Erna M. Asuncion-Proprietor

SALES INVOICE

Sold to: ZOREN L. AÑONUEVO Date:
TIN: Terms:
Address: BARAS OSCA/PWD ID No:
Business Style: Cardholder's Signature:

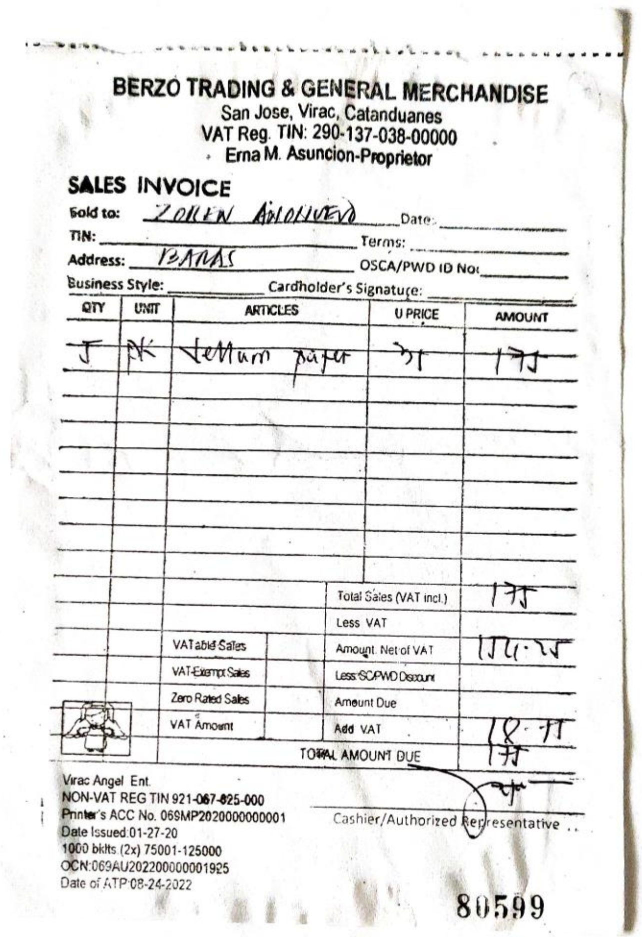
QTY	UNIT	ARTICLES	U PRICE	AMOUNT
33	pads	white pad	29	957
6	pcs	SPIRA pad	23.50	141
2	rms	coupon s	210	420
1	rm	coupon A4	220	220

		Total Sales (VAT incl.)	3,148
		Less VAT	
VATable Sales		Amount Net of VAT	2810.72
VAT-Exempt Sales		Less SC/PWD Discount	
Zero Rated Sales		Amount Due	
VAT Amount		Add VAT	337.28
		TOTAL AMOUNT DUE	3,148

Virac Angel Ent.
NON-VAT REG TIN 921-067-025-000
Printer's ACC No. 069MP2020000000001
Date Issued 01-27-20
1000 bklts (2x) 75001-125000
OCN 069AU202200000001925
Date of ATP 08-24-2022

Cashier/Authorized Representative

80096



BERZO TRADING & GENERAL MERCHANDISE
San Jose, Virac, Catanduanes
VAT Reg. TIN: 290-137-038-00000
Erna M. Asuncion-Proprietor

SALES INVOICE

Sold to: ZOREN ANONUEVO Date: ______
TIN: ______ Terms: ______
Address: BARAS OSCA/PWD ID No: ______
Business Style: ______ Cardholder's Signature: ______

QTY	UNIT	ARTICLES	U PRICE	AMOUNT
5	PK	Vellum paper	35	175

		Total Sales (VAT incl.)	175
		Less VAT	
VATable Sales		Amount: Net of VAT	156.25
VAT-Exempt Sales		Less:SC/PWD Discount	
Zero Rated Sales		Amount Due	
VAT Amount		Add VAT	18.75
		TOTAL AMOUNT DUE	175

Virac Angel Ent.
NON-VAT REG TIN 921-067-625-000
Printer's ACC No. 069MP2020000000001
Date Issued:01-27-20
1000 bklts.(2x) 75001-125000
OCN:069AU202200000001925
Date of ATP:08-24-2022

Cashier/Authorized Representative

80599

Republic of the Philippines
Department of Education
REGION V – BICOL
SCHOOLS DIVISION OF CATANDUANES
BARAS RURAL DEVELOPMENT HIGH SCHOOL
OSMEÑA, BARAS, CATANDUANES

ATTENDANCE SHEET
Enrichment Activity for Tutors

Name of Tutor	Date					
	Jan. 15 2024	Jan. 16 2024	Jan. 17 2024	Jan. 18 2024	FEB. 1 2024	FEB. 2 2024
AIRISH CRAE TAYAM						
ARIANE MAE ISAIAS						
LYICA JANAEL						
ROBI MICHAEL DIO						
KYRNN DALENZUELA						
RICHARD LATE TOLEDO						
JANNAH CARRANZA						
QUEENIE DACOMOS						
AVIGAEL VARGAS						
LIEZL TANIEGRA						
KENT-AR TRAPAGO						
LESTER TAYAM						
ASHLEY GUILBERTO						
BANCHIEL DAYAWON						

Republic of the Philippines
Department of Education
REGION V – BICOL
SCHOOLS DIVISION OF CATANDUANES
BARAS RURAL DEVELOPMENT HIGH SCHOOL
OSMEÑA, BARAS, CATANDUANES

ATTENDANCE SHEET
Enrichment Activity for Tutors

Name of Tutor	Date					
	FEB 5 2024	FEB 6 2024	FEB 7 2024	FEB 8 2024	FEB. 12 2024	FEB. 13 2024
ASHLEY GUALBERTO						
LESTER TAYAM						
KENT-AR TRAPAGO						
LIEZL TANIEGRA						
AVIGAEL VARGAS						
QUEENNIE DACOMOS						
JANINAH CARRANZA						
RICHARD LHIE TOLLETO						
KYANN PALENZUELA						
ROBI MICHAEL DIO						
LYKA TANAEL						
ARIANE MAE ISAIAS						
AINISH ZRAE TAYAM						
BARCHIEL DAYAWON						

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ATTENDANCE SHEET
Enrichment Activity for Tutors

Name of Tutor	Date					
	FEB. 19 2024	FEB. 20 2024	FEB. 21 2024	FEB. 22 2024	FEB. 27 2024	FEB. 28 2024
AVIGAEL VARGAS						
LIEZL TANIEGRA						
KENT-AR TRAPAGO						
LESTER TAYAM						
ASHLEY GUALBERTO						
QUENNIE DACOMOS						
JANNAH CARRANZA						
RICHARD LHIE TOLEDO						
ROBI MICHAEL NIO						
KYAN PALENZUELA						
AIRISH CRAE TAYAM						
ATHENE MATSAKIS						
LYKA TANAEL						
BARCHIEL DAYRON						

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Enrichment Activity for Tutors

Name of Tutor	Date					
	MARCH 4 2024	MARCH 5 2024	MARCH 6 2024	MARCH 7 2024	MARCH 18 2024	MARCH 19 2024
KYANN VALENZUELA						
AIRISH CRAE TAYAM						
ARIANE MAE ISAIAS						
LYICA TANAEL						
ROBI MICHAEL DIO						
RICHARD LHIE TOLEDO						
JANNAH CARRANZA						
QUENNIE DACOMOS						
AVIGAEL VARGAS						
LIEZL TANIEGRA						
KENT-AR TRAPAGO						
LESTER TAYAM						
ASHLEY GUALBERTO						
BARCHIEL DAYANON						

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Enrichment Activity for Tutors

Name of Tutor	Date					
	MARCH 20, 2024	MARCH 21, 2024	MARCH 25, 2024	MARCH 26, 2024	APRIL 2, 2024	APRIL 3, 2024
RICHARD LHIE TOLLEDO						
ROMI MICHAEL DIA						
LYICA TAÑAEL						
ARIANE MAE ISAIAS						
AIRISH CRAE TAYAM						
KYANN VALENZUELA						
ASHLEY GUALBERTO						
LESTER TAYAM						
KENT-AN TRAPAGO						
LIEZL TANIEGRA						
AVIGAEL VARGAS						
QUEENIE DACOMOS						
JANNAH CARRANZA						
BARCHIEL DAYAWON						

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ATTENDANCE SHEET
Enrichment Activity for Tutees

Name of Tutee	Date					
	JAN 19, 2024	FEB. 2, 2024	FEB. 9, 2024	FEB. 16, 2024	FEB. 23, 2024	MARCH 1, 2024
JERUSH MAE CARRANZA						
SCOTTY FAITH CHAVEZ						
MAY MATOZA						
KATE CATHERINE ROMETE						
IRESH SULAD						
RACHELLE ANN TABINAS						
MA. ALTHEA TERROPIAS						
DANIE TONNECOMPO						
ALFEA ZAFE						
MARIC JUSTINE ALTABANO						
ZYRUS GIL BUTIAL						
MARC LAWRENZ CATIMACHA						
MARK ANTHONY CARRANZA	Mark	Mark	Mark	Mark	Mark	Mark
GABRIEL DE SEVILLA						
JOHN BRIAN LLANTERO						
NICO TANAEL	Nico Tanael	Nicotanael	N. Tanael	N. Tanael	N. Tanael	Nitanael
PRINCE CARL TARROMA						
JOHN KEY TEVAR						
LAWRENZ CARL TONNECOMPO	Laurenz	Laurenz	Laurenz	Laurenz	Laurenz	Laurenz

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Enrichment Activity for Tutees

Name of Tutee	Date					
	MARCH 7, 2024	MARCH 8, 2024	MARCH 15, 2024	MARCH 22, 2024	APRIL 4, 2024	APRIL 5 2024
1) JERICAH MAE CARRANZA						
2) SOTTY FAITH CHAVEZ						
3) MAY MATOZA						
4) KATE CATHERINE ROSETA						
5) IRESH SULAD						
6) RACHELLE ANN TABINAS						
7) MA. ALTHEA TERROBIAS						
8) DANIE TORRECAMPO						
9) ALPEA ZAFE						
10) MARK JUSTINE ALTABANO						
11) ZYRUS GIL BUTIAL						
12) MARC LAWRENZ CAMACHO						
13) MARK ANTHONY CARRANZA						
14) GABRIEL DE SEVILLA						
15) JOHN BRIAN LLANTERO						
16) NICO TANAEL						
17) PRINCE CARL TARROMI						
18) JOHN REY TEVAR						
19) LAWRENZ CARL TORRECAMPO	Lawrenz	Lawrenz	Lawrenz	Lawrenz	Lawrenz	Lawrenz

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Enrichment Activity for Tutees

Name of Tutee	Date					
	APRIL 8, 2024	APRIL 11 2024	APRIL 12, 2024	APRIL 15 2024	APRIL 16 2024	APRIL 17, 2024
MARK JUSTINE ALTABANO						
ZYRUS GIL BUTIAL						
MARK ANTHONY CARRANZA	Mark	Mark	Mark	Mark	Mark	Mark
MARK LAWRENZ CATIMACHA						
GABRIEL DE SEVILLA						
JOHN ADRIAN LLANTERO						
NICO TANAEL	N. Tanael	N. Tanael	N. Tanael	N. Tanael	N. Tanael	N. Tanael
PRINCE CARL TARROMA						
JOHN REY TEVAR						
LAWRENZ CARL TORRECAMPO						
JERICAH MAE CARRANZA						
SCOTTY FAITH CHAVEZ						
MAY MATOZA						
KATE CATHERINE NOCETE						
IRISH SULAD						
RACHELLE ANN TABINAS						
MS. ALTHEA TERROBIAS						
PANIE TORRECAMPO						
ALDE ZAFE						

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Enrichment Activity for Tutees

Name of Tutee	Date					
	MAY 6, 2024	MAY 7, 2024	MAY 8, 2024	MAY 9 2024	MAY 10 2024	MAY 13 2024
1) MARK JUSTINE ALTABANO						
2) ZYRUS GIL BAUTISTA						
3) MARC LAWRENZ CAMACHO						
4) MARK ANTHONY CARRANZA	Mark	Mark	Mark	Mark	Mark	Mark
5) GABRIEL DE SEVILLA						
6) JOHN BRIAN LLANTERO						
7) NICO TANAEL	N. Tanael	N. Tanael	N. Tanael	N. Tanael	N. Tanael	N. Tanael
8) PRINCE CARL TARROMA						
9) JOHN REY TEVAR						
10) LAWRENZ CARL TORRECAMPO	Laurenz	Laurenz	Laurenz	Laurenz	Laurenz	Laurenz
11) JERICOH MAE CATARONJA						
12) SCOTTY FAITH CHAVEZ						
13) MAY MATOZA						
14) KATE CATHERINE ROSETE						
15) FRESH SULAD						
16) RACHELLE ANN TABINAS						
17) MA. ALTHEA TERROBIAS						
18) PANLE TORRECAMPO						
19) ALPEA ZAFE						

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Enrichment Activity for Tutees

Name of Tutee	Date					
MARK JUSTINE ALTAMIRANO						
ZYRUS GIL BUTIAL						
MARK ANTHONY CAMARANZA	Mark	Mark	Mark	Mark	Mark	Mark
MARK LAWRENZ CAMACHO						
GABRIEL DE SEVILLA						
JOHN ROLIAN LLANTERO						
NICO TANAEL	N. Tanael	N. Tanael	N. Tanael	N. Tanael	N. Tanael	N. Tanael
PRINCE CARL TARROMA						
JOHN REY TEVAR						
LAWRENZ CARL TORRECAMPO	Lawrenz	Lawrenz	Lawrenz	Lawrenz	Lawrenz	Lawrenz
JENICAH MAE CATIRANZA						
SCOTTY FAITH CHAVEZ						
MAY MATOZA						
KATE CATHERINE ROSETE						
IRESH SULAD						
RACHELLE ANN TABINAS						
MA. ALTHE TERRIBIAS						
PAIGE TORRECAMPO						
AZIDA ZAFE						