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THE CORRELATION BETWEEN BASIC MATHEMATICS SKILLS AND ATTITUDE TOWARDS MATHEMATICS

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February, 2025

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in Practical Research 2

By

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APPROVAL SHEET

In partial fulfillment of the requirements in Practical Research 2, this study entitled **THE CORRELATION BETWEEN BASIC MATHEMATICS SKILLS AND ATTITUDE TOWARDS MATHEMATICS,** prepared and submitted by **Rincy V. Baguio, Mynell Jake N. Butaya, Kyan Aldrin M. Urquiza, James Errol R. Canonigo** and **Fran Timothy F. Acquas** is hereby recommended for oral examination, approval and acceptance.

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Approved by the panel of examiners, after the presentation of the study with the grade of **PASSED**.

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The Researchers

ABSTRACT

This research aims to determine if a significant relationship exists between basic mathematics skills and attitudes towards mathematics. Senior high school students from a private institution were sampled using proportionate stratified random sampling resulting in a total of 148 respondents. Test and survey questionnaires were used in getting the data. Further, the data were analyzed using statistical tools such as Frequency and Percentage Distribution, Mean and Standard Deviation, and Pearson *r* Correlation. The result of the study revealed that female students demonstrated a more solid foundation in basic mathematics skills and a more positive attitude toward mathematics compared to their male counterparts. Meanwhile, private schools outperformed public schools in terms of cultivating basic mathematics skills while public schools exhibited a more positive attitude toward mathematics than private schools. The findings revealed a significant relationship between basic mathematics skills and attitude toward mathematics indicating a moderately low positive correlation.

Keywords: Basic mathematics skills, attitude towards mathematics, Pearson r Correlation

TABLE OF CONTENTS

	Page
TITLE PAGE	i
APPROVAL SHEET	ii
ACKNOWLEDGEMENT	iii
ABSTRACT	v
LIST OF TABLES	ix
LIST OF FIGURES	x
Chapter 1: INTRODUCTION	
Background of the Study	1
Statement of the Problem	4
Hypotheses	5
Review of Related Literature	5
Theoretical Framework	20
Conceptual Framework	21
Significance of the Study	22
Scope and Delimitation	23
Definition of Terms	23
Chapter 2: METHODS	
Research Design	25
Research Respondents	25
Research Locale	27

Research Instrument 28

Data Gathering Procedure 29

Ethical Considerations 29

Data Analysis 31

Chapter 3: RESULTS AND DISCUSSION

Research Problem 1 36

Research Problem 2 36

Research Problem 3 38

Research Problem 4 40

Research Problem 5 41

Research Problem 6 43

Chapter 4: CONCLUSION AND RECOMMENDATION

Conclusion 43

Recommendations 44

REFERENCES 48

APPENDICES

Appendix 1a Letter for Permission (School President) 59

Appendix 1b Letter for Permission (BED Principal) 61

Appendix 2a Letter to the Validators (Panelist 1) 63

Appendix 2b Letter to the Validators (Panelist 2) 65

Appendix 3 Validated Survey Questionnaire 67

Appendix 4a Validator's Sheet (Panelist 1) 68

Appendix 4b	Validator's Sheet (Panelist 2)	69
Appendix 5	Inform Consent Form	70
Appendix 6	Inform Parental Form	71
Appendix 7	Raw Data (Pilot Testing)	72
Appendix 8	Result of Pilot Testing	78
Appendix 9	Sample Test Questionnaire(Pilot Testing)	79
Appendix 10	Raw Data (Test Questionnaire)	80
Appendix 11	Raw Data (Survey Questionnaire)	113
Appendix 12	Editor's Certificate	138

CURRICULUM VITAE 139

LIST OF TABLES

Table		Page
1	Table Interpretation on the Level of Basic Mathematics Skills in the Basic Topics in Mathematics	31
2	Table Interpretation on the Basic Mathematics Skills	32
3	Table Interpretation on the Attitude of Students toward Mathematics	34
4	The Quantitative Interpretation of the Degree of Relationship of Pearson Correlation Coefficient	34
5	The Demographic Profile of the Respondents	35
6	Level of Basic Mathematics Skills of the Respondents in the Fundamental Mathematics Topics	35
7	Level of Attitude towards Mathematics of the Respondents	37
8	Level of Basic Mathematics Skills in terms of Sex and Type of School (Grade 10)	39
9	Level of Attitude towards Mathematics in terms of Sex and Type of School (Grade 10)	40
10	Correlation between Basic Mathematics Skills and Attitude towards Mathematics	42

LIST OF FIGURES

Table		Page
1	Conceptual Framework	22
2	Research Locale	26

Chapter 1
INTRODUCTION

Background of the Study

Basic mathematics skills are believed to be necessary for carrying out straightforward calculations, utilizing numbers, values, quantities, and any other measurements. The basis for learning and utilizing more complex mathematical ideas is provided in fundamental principles of addition, subtraction, multiplication, and division (Indeed Editorial Team, 2023). GeeksforGeeks (2023) added that, to do accurate and effective numerical computations, all of these abilities are necessary. On the other hand, the term attitude is not a new concept in mathematics education. Attitude is defined as "a predisposition or a tendency to respond positively or negatively to a certain idea, object, person or situation" (Mensah, Okyere, & Kuranchie, 2013). In addition, according to Lin and Huang (2014), attitudes towards mathematics can be referred to as positive, negative, or neutral feelings and dispositions.

In the global scenario, most African nations are weak in terms of mathematics, competencies in the primary and secondary levels, lowering the number of competent students who might major in mathematics in the college level (International Mathematical Union (IMU), 2014). On the other hand, Chand (2021) conducted a study entitled "Perceived Causes of Students' Poor Performance in Mathematics: A Case Study at Ba and Tavua Secondary Schools", as the Fijian government and stakeholders are concerned about whether the country's education system can produce graduates who have the necessary skills to survive in the rapidly changing

technological society given the persistent trend of low mathematics achievement in secondary schools.

In the national scenario prior to the pandemic, the Philippines had difficulty with mathematics education and consistently came in last on international tests (San Juan, 2019). The average mathematical literacy score for Filipino pupils in the Program for International Student Assessment (PISA) 2019 International Report was 353 points, which is much lower than the Organisation for Economic Cooperation and Development (OECD) average of 489 points and indicates below Level 1 proficiency (OECD, 2019). Additionally, the Philippines obtained only 297 on the 2019 Trends in International Mathematics by the International Association for the Evaluation of Educational Achievement's Mathematics and Science Study (TIMSS) (Mullis et al., 2019). Furthermore, according to a study of Igarashi & Suryadarma (2021) entitled “Foundational Mathematics and Reading Skills of Filipino Students over a Generation”, between 2003 and 2019, Filipino children's basic mathematical skills continually declined. According to their research, the fall from 2013 to 2019 was four times as severe as the decline from 2003 to 2013.

In the Division of Davao City, it was observed that students' performance in Mathematics is very low. Based on the ranking of all the Divisions in Region XI, Davao City is considered as low performing (Galabo, Abellanosa & Gempes, 2018). In addition, the study conducted by Tacadena (2021) in Carmen District Davao Del Norte which entitled “Classroom Management and Students’ Learning in Mathematics”, showed a the mean score for students' mathematical learning of 75.68,

which corresponds to a descriptive equivalent of "fairly satisfactory." This indicates that the degree of mathematical learning attained by students is not always evident.

When acquiring new information, people participate in a variety of behaviors that lead to a change in their behavior (Cardino & Ortega-Dela Cruz, 2020). This process is known as learning. It takes planning and willingness to learn mathematics because the process is dynamic. Many students think of mathematics as a demanding subject that makes them tired and anxious (Arenillo & Cruzado, 2014). Previous research has predominantly focused on examining the relationship between students' attitudes toward Math and their academic achievement, as demonstrated in studies such as "Students' Attitude toward Mathematics and its Relationship with Mathematics Achievement" by Hwang & Son (2021), "Attitude and Performance in Mathematics I of Bachelor of Elementary Education Students: A Correlational Analysis" by Subia, Salangsang, & Medrano (2018), and "Grade 10 - 12 Learners' attitude towards mathematics and how the attitudes affect performance" by Ndlovu (2016). The results of these studies point to a correlation between students' academic achievement and attitudes toward Mathematics.

Therefore, the proponents of this study want to examine the relationship of basic mathematics skills and attitude towards mathematics as the connection between the variables remains understudied. The goal of this study is to connect the dots by analyzing how basic mathematical abilities correlates with the students' attitudes towards mathematics.

Statement of the Problem

This study aims to assess the relationship between the basic mathematics skills of the students and their attitude towards mathematics. Specifically, this study seeks to answer the following questions:

1. What is the demographic profile of the students in terms of:

    1.1 sex

    1.2 type of school (grade 10)

2. What is the level of basic mathematics skills of students in terms of:

    2.1 operations on decimals;

    2.2 operations on fractions;

    2.3 operations on integers;

    2.4 operations on polynomials; and

    2.5 evaluating algebraic expression?

3. What is the level of students' attitude towards mathematics in terms of:

    3.1 self-perception;

    3.2 beliefs; and

    3.3 mindset?

4. What is the level of basic mathematics skills of students based on their test scores when grouped according to:

    4.1 sex; and

    4.2 type of school (grade 10)?

5. What is the level of students' attitude towards mathematics when grouped according to:

    5.1 sex; and

5.2 type of school (grade 10)?

6. Is there a significant relationship between the students' basic mathematics skills and attitude towards mathematics?

Hypotheses

Ha: There is a significant relationship between students' basic mathematics skills and their attitude towards mathematics.

Ho: There is no significant relationship between students' basic mathematics skills and their attitude towards mathematics.

Review of Related Literature

In this section, the researchers gathered different information from different sources that are related to basic mathematics skills, and attitudes towards mathematics to gain deeper understanding of concept and provide strong support for this study.

Math Education's Impact on Gender Differences and Achievement

Individuals can cope with issues that emerge in daily life at the personal, academic, and professional levels by developing the competences necessary in mathematics education (Buritica, Almeida, Mantero, & Rosal, 2023). However, it does not appear like this is the reality. According to recent studies, the achievement difference between male and female pupils in mathematics is progressively starting to close. In a study conducted by Anjum (2015), it was revealed that men often perform higher on arithmetic assessments that require problem-solving, while females do better in calculation.

Meanwhile, the study by Ajisuksmo & Saputri (2017) entitled of "The Influence of Attitudes towards Mathematics, and Metacognitive Awareness on Mathematics

Achievements" state that student motivation for accomplishment is stronger among female students than among the males. Such intense incentives for success will affect the growth of a favorable attitude toward mathematics, which will subsequently affect the high levels of mathematics achievement among female pupils. Also, Abe & Gbenro (2015), stated that male pupils demonstrated a greater interest in and attitude toward mathematics in comparison to female students. Furthermore, there may be a mistaken anticipatory judgment of females' math anxiety because of the widely held belief that they are less capable than boys in mathematics (Ganley & Lubienski, 2016).

Mathematics Performances of Public and Private School Students

Learning outcomes are impacted by school context elements such as student demographics, school type and location, and school community characteristics (Fischer, 2013). Resources for learning, including libraries, children's services, and successful adults who are well-educated and serve as role models for their children, vary among school areas (Carlson & Cowen, 2015). Consequently, children attending schools exhibit distinct skills, attitudes, and behaviors, partly due to differences in their private and public school settings (Katz, 2014). Recent years have seen a global increase in the significance of the public education compared to the private education (Ntim, 2014). According to Akaguri (2013), the argument over the relative benefits of public education compared to private education has grown in significance and relevance as private schooling grows more popular in Ghana. The belief that private schools provide an excellent education is prevalent in Ghana, as it is in other nations.

According to the findings of the study by Adekunle and Otiegede (2020), there is no significant difference in the perspectives of JHS students from private and public schools on mathematics. Additionally, the findings of Kasimu and Imoro (2017) also indicated a somewhat elevated level of confidence in private pupils' ability to master mathematics. However, the result of the study by Asomah, Dennis, Alhassan and Aseidu (2019) showed that despite student opinions being generally positive, private school students' attitudes were comparatively more positive than those of public schools.

Additionally, private school students have shown more engagement with learning mathematics and are more self-regulated in the mathematical classroom as compared to public school students. Thus, private schools are better than public schools in terms of academic achievement in mathematics learning (Shehzadi, Batool & Kalsoom, 2022). Moreover, Njiku (2019) concluded that although there were notable differences in mathematics performance between public and private schools, students in private schools were found to perform better than those in public schools.

Struggles in Learning Decimals and Fractions with Math Operations

Even though mathematical skills are crucial for success in the secondary level, understanding fractions has historically been a particularly challenging subject to math learners (Roesslein & Codding, 2018). Although learning fractions can be challenging (Gabriel et al., 2013), Siegler (2017) stated that many kids never fully understand it. This lack of understanding is particularly regrettable because fraction is a fundamental concept in many fields of science and mathematics. The basis for

fraction treatments for primary-level pupils is identified to be challenging for math learners as reviewed in the current systematic review.

Van Hoof, Degrande, Ceulemans, Verschaffel, & and Van Dooren (2018) emphasized that students struggle with understanding rational numbers because of natural number bias, relating to size, operations, and density. In addition, Galabo, Abellanosa & and Gempes (2018) stated that instead of viewing a fraction as a ratio between the numerator and denominator, students frequently view it as two distinct numbers. This wrong understanding of a fraction can give root to the false belief that, as with natural numbers, the numerical value of a fraction grows as either the denominator or the numerator increases, or both. Like with natural numbers, some students have been seen to incorrectly believe that longer decimals are greater and shorter decimals are smaller when it comes to decimal numbers.

Brumbaugh's (2013) supports that pupils will have difficulty understanding percentages if they are unable to convert between fractions and decimals and comprehend the link between them. Also, many students struggle with place value, problem-solving strategies, and subtracting decimals. Students may undoubtedly get a lot of practice in this area with decimal subtraction. Moreover, considering the significance of grasping rational numbers for future academic and career achievements, still, many students are struggling in dealing with limited comprehension of fraction and decimal arithmetic and it poses a substantial concern (Siegler, 2017).

Furthermore, according to Fitri and Prahmana (2019), the outcome demonstrated that pupils continued to commit errors in their approach to the fraction

problem; primarily, it was incorrect for pupils to rewrite the problem's known components. Then they misapplied the idea of fractional counting operations. Moreover, converting mixed fractions into ordinary fractions and vice versa is incorrect. In addition, it was incorrect for them to convert integers to fractions. Another was that when executing a fractional counting procedure, they were less diligent. Lastly, they should not sort fractional numbers.

With that Griffiths, Back & Gifford (2020) said that it has long been known that teaching fractions and decimals may be challenging. Prior studies have demonstrated that secondary school students still struggle with fluency in this area of mathematics, suggesting that more work needs to be done in elementary schools to strengthen fundamental knowledge. Hence, the knowledge and comprehension of primary school instructors is a crucial element of this challenge, as those who lack confidence in their subject knowledge of decimals and fractions generally find it difficult to guarantee that students acquire a solid conceptual understanding.

The Crucial Role of Understanding Integers: Challenges of Students

The fundamental idea of integers serves as the foundation for learning algebra in primary school mathematics education. It is regarded as a crucial prerequisite for studying mathematics (Cetin, 2019). In the context of Sushma (2023), mixed integer operations comprise whole numbers and negatives. All fundamental mathematical actions applied to whole or natural numbers apply to integers. Many students struggle with integers, which affects their algebraic equation-solving abilities. Gaps in basic math knowledge, particularly in dealing with integer operations and signs, lead to confusion (Rubin, Marcelino, Mortel, & Lapinid, 2014).

According to Bryant et. al. (2020), most students facing math challenges encountered earlier struggles in their academic journey. Surprisingly, some who were once proficient may find themselves grappling with more complex concepts involving rational numbers, including integers. Moreover, when performing operations involving integers, the majority of students found it difficult and often misinterpreted the rules due to their confusion with negative numbers (Fuadiah, Suryadi & Turmudi, 2016).

Students frequently encounter the misconception of "rule mix-up," wherein they simply remember the rules of each operation of integers and apply them incorrectly, because they are confused by signed numbers, particularly when the equation contains either a positive (+) or negative (-) number (Khalid & Embong, 2019). In parallel, Permata, Wijayanti and Masriyah (2019) discovered that students had trouble subtracting whole numbers. When subtracting integers, students most frequently mistakenly believe that the minuend is always a negative integer. Makonye and Fakude (2016) pointed out that “negative numbers are difficult to teach”.

The study of Fuadiah, Suryadi, and Turmudi (2016) examined how students grasp the concept of negative numbers and pinpointed the challenges they face in understanding integers and counting operations. It further revealed the barriers to learning about negative numbers. Despite teachers' efforts to explain integer counting procedures, students still had misconceptions. Further, it was also evident in the study of Amaliyah, Wahyuni, Nura & and Sahidah (2022) that when it comes to problem-solving, students often struggle with the concepts of adding and subtracting integers, and the main reason behind their difficulties is their lack of motivation to learn.

Struggles with Polynomial Operations: Learning and Mistakes

According to Lynch (2023) with the title "Activities to teach students to solve polynomial equations" students can acquire problem-solving techniques, and critical thinking, and improve their analytical skills by solving polynomial equations. Manaher (2023) also stated that polynomial expressions are a specific type of algebraic expression that only contain terms with non-negative integer exponents. Students encounter numerous challenges in dealing with polynomial equations and functions. Secondary pupils make mistakes while adding and subtracting polynomials, display signs inaccurately in challenging problems, and hold certain misconceptions regarding polynomials (Monrat, Phaksunchai, Chonchaiya, 2022).

In addition, polynomial functions are the simplest of all functions in mathematics in part because they only involve multiplication and addition. In the same study it stated that a teacher or student may have encountered difficulties factoring a particular polynomial, as many people are unable to factor polynomials with degrees higher than three (Soso, 2020). Further, Hasanah et al. (2021) stated that many students made careless errors in either doing wrong calculations or plotting a coordinate pair incorrectly. This mistake surely has an impact on the graph of the function such as having wrong maximum or minimum values.

Student's Challenges in Evaluating Algebraic Expression

The challenges that students encounter are more evident when they must convert a mathematical concept into a mathematical operation to solve a problem. Students face challenges in formulating and addressing algebraic issues, especially when evaluating algebraic expressions (Samuel, Mulenga & Mukuka, 2016). Marpa

(2019) revealed that the students have difficulties in identifying the number of terms when parentheses are used in the given algebraic terms. It is also important to note that students were unable to recall the rules and functions of exponents in determining the degree of algebraic expressions. In addition and subtraction, errors of the students were commonly observed in the use of the statement subtracted or added from or subtracted or added to. They misconceived the meaning of "to and from" in the statement.

The study of Ferrer (2020) revealed that students commit errors in algebraic terms, with the combination of terms being the most common error (27%). This is due to their inability to distinguish similar and dissimilar terms from test answers. Improper distribution (24%), cancellation (23%), and removal of symbols of inclusions (18%) are also common errors. Students are not knowledgeable about the basic rules of cancellation, such as when to cancel algebraic terms. Also, according to her study students often forget to carry the signs of the term with them. The study suggests that students need to improve their understanding of these rules and be more proficient in identifying similar and dissimilar terms.

Students' Perceptions of Understanding Mathematics

Perceptions are integral components of attitudes, specifically associated with the cognitive aspects of attitudes (Giannoulas & Stampoltzis, 2021). Perception plays a crucial role in the field of mathematics education. According to Salifu and Bakari (2022), perception refers to the process of selecting, organizing, and interpreting sensory data to understand the world around us. In the context of mathematics, students' perceptions are influenced by various factors, including the attitude and

teaching style of their teachers. Mathematical perception encompasses students' interest and sentiments towards the subject. The research of Kasmin, Othman, and Ahmad (2019) highlights that students' enthusiasm for learning mathematics is a significant factor that impacts their performance and instruction in math lessons at all levels of education.

Accordingly Kunwar (2021), states that the results indicated that low-performing students held a negative perception of mathematics or were generally uninterested in learning the subject. Additionally, it was observed that students' perceptions of mathematics had a significant impact on their academic achievement. The study of Dash & Raghavan (2020) also highlighted that peers exert the most significant influence on how mathematics is perceived. The students' perception of mathematics is advisable to harness peer group learning.

Students' perceptions have behavioral consequences that influence their learning approaches and outcomes in mathematics. Warner & Kaur (2017) highlights the global underperformance of students in mathematics and the link between students' perceptions and their learning outcomes. Recognizing and addressing students' perceptions can lead to more effective instructional strategies and improved learning outcomes in mathematics. Students' motivation and learning efforts are shaped by their perceptions of their abilities to reach set goals. The significance and perceived usefulness of mathematics is largely connected to students' views on the subject's importance, subsequently impacting their success and level of engagement in math classes (Schommer-Aikins, Duell & Orpha, 2013).

On a positive note, the study of Hagan, Amoaddai, Lawer, & Atteh (2020) mentioned that despite finding mathematics challenging, students hold a positive view of it due to its perceived importance in their daily lives. However, the study revealed a weak and negative correlation between students' perception and their performance in mathematics.

Students' Beliefs in Mathematics as a Subject

Student success and involvement in mathematics classes are directly correlated with their beliefs on mathematics as a subject, which are mostly based on its perceived significance and importance (Robas, Madariaga, & Villarroel, 2020). Many people have the misconception that mathematics is a tough subject that requires a lot of work, higher-order cognitive processes to absorb, and difficulty understanding. In regard to this, Escobar (2017) confirmed, that students' views of mathematics as a challenging subject have a detrimental impact on their performance and lead to unproductive beliefs about learning this subject. Because it is the most significant factor influencing the degree of interest demonstrated in this discipline and, consequently, in its learning, students also believe that mathematics is beneficial, a view that is favorably associated with performance (Schommer-Aikins, Marlene, Duell, & Orpha, 2013).

Furthermore, Muhtarom, Juniati, Siswono, & Rahmatika (2018) concluded in their study, that a student's involvement with their social system, particularly the classroom setting that they experience during each learning activity, has an impact on the process of creating their beliefs. The similarity in the ideas held by teachers and

students indicates that the teacher has an impact on the beliefs of his pupils. However, a student's success in learning mathematics is greatly influenced by their ideas about the subject. According to Markovits & Forgasz (2017), even though most students at both grade levels disliked studying mathematics, they still believed it was crucial to learn the subject. They also believed they were proficient in math.

In contrast, many students were not convinced about the relevance and use of mathematics. However, the large standard deviations implied that there was a large spread among the results and thus among students' beliefs about the relevance of mathematics (Gijsbers, De Putter Smits, & Pepin, 2019). According to Prendergast et al. 's (2018) statistical analysis of the data, students who had completed more of their secondary school were more likely to believe that not all issues could be resolved by following standard processes. Conversely, the same students believed less strongly than their younger peers that conceptual understanding was crucial and that they could handle time-consuming difficulties.

Moreover, the belief in math as a "boring" subject is decried as frequently as math by both kids and adults as something they "can't do" due to a lack of natural talent. The idea of math is that you either understand it or you don't. Most of us feel as though we do not as we sit in class (The Learning Network, 2022). Additionally, Flom (2021) discussed that Paul Lockhart, a mathematician who switched from instructing at prestigious colleges to motivating elementary school students, contends that all of those characteristics are true. In the article of Denville (2018), he described how Lockhart asserts that although mathematics as a discipline is erroneous, students who claim their lessons are boring and stupid are accurate. The problem is that our

society does not acknowledge that arithmetic is truly an artistic endeavor. Therefore, they educate it in a way that might just as easily destroy any other kind of art.

Students' Mindsets Towards Mathematics

In math, having a growth mindset could mean having the freedom to learn the material at your own pace and not feeling guilty when you make mistakes, joy when you or someone else gets it, as well as curiosity about things outside the scope of the first query (Academy, 2023). In the context of Apiola and Sutinen (2020), they stated that there is significant evidence about the relevance of mindset to personal growth and academic accomplishment.

Students' attitudes toward mathematics, or what Boaler (2018) refers to as mathematical mindsets, are predicated on two notions of mathematical intelligence, just like the idea of mindset in general. Daly, Bourgaize and Vernitski (2019) state that students with a developing mindset in mathematics feel that their mathematical talents can be developed with rigorous work and persistence, in contrast to students with a fixed mindset in mathematics who believe that their mathematical abilities are intrinsic and fixed (fixed mathematical mindset). A growing mathematical mindset positively affects students' success in acquiring mathematics achievement, according to multiple studies on academic achievement in the subject (Bernardo, 2020).

The research by Degol et al. (2018) demonstrates that the growth mindset has distinct benefits for mathematical performance for male and female pupils, with the former benefiting more from it than the latter. Additionally, Sigmundsson et al. (2020) demonstrate that male and female students have quite different gender-specific mindsets. On the other hand, research by Macnamara and Rupani (2017) indicates

that there is no statistically significant variation in students' growth mindsets with respect to gender. As a result, variations in gender can reveal information about pupils' mathematical thought processes when they are studying mathematics.

The Importance of a Positive Attitude

Math performance in the short term might be outstanding but excellent attitudes can produce so much more than just a few impressive exam results. Educators should promote positive attitudes in math not just to increase student achievement but also to enhance general cognitive functioning and foster lifelong learners (Prodigy Education, 2019). Children may start developing a good attitude toward arithmetic at a very young age, setting them up for academic success. With the right practice, instruction, motivation, and support, every youngster can succeed in mathematics (Hewer, 2022). Additionally, over the years, math has been taught in the same manner. The use of mathematics in daily life, business, and society has changed as a result of the contemporary age of science and technology. However, as the digital era advances, there is a growing need to depart from conventional wisdom and adapt to the needs of the twenty-first century (Joson, 2017).

According to Renaissance (2023), the relationship between math motivation and math success in pupils in high school was examined in a separate Programme for International Student Assessment (PISA) research. Both intrinsic and instrumental motivation, which indicate whether students value math for its application to their academic or professional objectives, were shown to be connected to math success in this study, which examined two separate forms of motivation. One of the studies stated intrinsic motivation is linked to curiosity and a desire to learn math (Guy,

Cornick, & Beckford, 2015). If there is an innate motivation for students to learn mathematics they find studying mathematics to be exciting which makes them want to do it (OECD, 2013). It is thought that learning is fueled by motivation. According to OECD PISA 2012 results (2013) found that intrinsic motivation had an impact on performance, job choice, and level of student involvement. Studying motivating factors in relation to attitude and accomplishment is therefore essential.

According to Digitale (2018), high achievement comes from having a positive attitude, which in turn leads to having an even better attitude and a positive learning cycle. It may also have the opposite effect and become a vicious circle. Additionally, in "Positive Attitude Toward Math Supports Early Academic Success: Behavioral Evidence and Neurocognitive Mechanisms" by Chen et al. (2019), a child's academic learning and success are believed to be significantly impacted by a positive attitude, which includes strong interests and self-belief. Positive attitude has been connected to higher classroom achievement and higher scores on standardized tests in mathematics, the subject area where this influence has been studied the most.

Self-perceptions of students as mathematicians are referred to as their mathematical self-confidence (Mazana, Montero, and Casmir, 2018). According to Van der Bergh (2013), pupils who have strong self-confidence have faith in their capacity to succeed effectively in their math studies, conquering their fear of failure. In contrast, students with poor self-confidence do not trust in themselves and hence prefer to avoid facing mathematics challenges. Consequently, this minimizes their opportunities to improve their mathematics abilities and success. Therefore, it would

be beneficial to research how students feel about their confidence and how it connects to other factors into action (Mazana, Montero, & Casmir, 2018).

According to Pinxten et al. (2014), a child's academic learning and achievement are regarded to be significantly influenced by a good attitude that includes strong interests and beliefs in one's abilities. A positive attitude has been associated with greater classroom accomplishment and better exam results in the subject of mathematics, where it has been studied the most thoroughly. Strong mathematical curiosity and self-efficacy have been shown to significantly affect children's academic progress in a variety of studies (Lee, Ning, & Goh, 2014).

Furthermore, Marchis (2013), said that just one tenth of the students enjoy creating mathematical problems, and less than half of them enjoy explaining mathematics. Students' attitudes toward mathematics and their ability to solve problems are positively correlated. Pupils with higher problem solving skills are those who enjoy mathematics, enjoy explaining their solutions to others, and dislike working on more problems of the same kind. In addition, Mazana, Montero & Casmir (2019), “Investigating Students' Attitude towards Learning Mathematics”, student’s attitudes toward mathematics, teachers' methods of instruction, and the school environment all have an impact on students' learning and performance in the subject.

Additionally, Orozco-Guzmán et al., 2020 note that the elements that encourage favorable Perceiving mathematical talents and recognizing their utility are attitudes toward mathematics. future applications of mathematics, parental attitudes toward mathematics, and attitudes toward mathematics emotional and sentimental

responses that affect the pedagogy of mathematics Instruction and learning Mathematics attitudes, good attitudes toward education, teacher attitudes, and instructional methodologies good study practices. In addition, Ajisuksmo, C., & Saputri, G. (2017). “The Influence of Attitudes towards Mathematics, and Metacognitive Awareness on Mathematics Achievements”, Mathematics achievement was determined by looking at the score on the students' school report cards from the semester the research was being conducted. Students' attitudes toward mathematics were measured using the Attitudes Towards Mathematics Inventory (ATMI), while their metacognitive ability was measured using the Metacognitive Awareness Inventory (MAI).

Understanding fractions, decimals, and related operations continues to be difficult for math students, frequently as a result of an over-reliance on calculators and algorithms. Despite instructional attempts, understanding numbers is difficult to master in algebra. Math learning experiences are highly influenced by attitudes and mindsets; a growth mindset supports accomplishment, but negative attitudes can cause anxiety. The accomplishment gap between men and women in arithmetic is closing, and positive attitudes are thought to play a role. Reframing beliefs and adopting successful tactics are essential for developing productive learning environments. However, many students lack the solid mathematical grounding that would better prepare them for more advanced mathematics courses.

Theoretical Framework

This study is anchored in the Self-Efficacy Theory of Bandura which states that an individual's self-efficacy reflects their confidence in their ability to execute the

behaviors necessary to achieve specific performance goals (Bandura, 1977, 1986, 1997). Self efficacy refers to the belief in one's capacity to exercise control over one's own motivation, behavior, and social environment. The goals for which individuals strive for, the amount of effort they invest in achieving these goals, and the possibility of achieving specific levels of behavioral performance are all influenced by these cognitive self-evaluations.

This theory was chosen by the researchers because it addressed the attitude of the students towards mathematics, who are the study's responders and because they were pertinent to the research setting. According to Bandura, self-efficacy is the belief that one can exert control over their own motivation, behavior, and social environment. The objectives for which individuals strive, the amount of effort put out to obtain goals, and the possibility of achieving specific levels of behavioral performance are all influenced by these cognitive self-evaluations. A positive attitude towards math can contribute to the development of high math self-efficacy beliefs (Zakariya Y. F. 2022). When individuals perceive math as interesting, relevant, and achievable, they are more likely to believe in their ability to succeed in mathematical tasks and challenges. Lastly, one of the many potential sources or initial stages of how different factors influence the attitude of an individual towards mathematics is their basic mathematics skills (Lopez-Garrido, 2023).

Conceptual Framework

The study was guided by the following conceptual framework shown below:

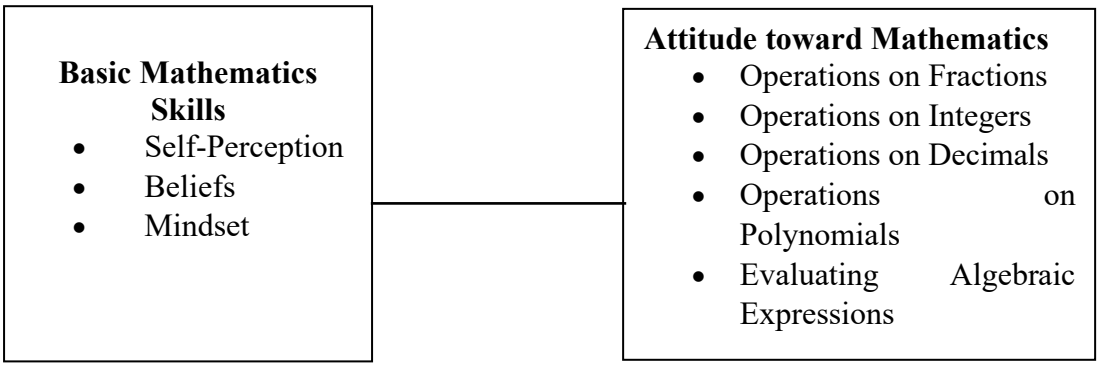

Figure 1: Conceptual Framework

As shown above, the researchers were trying to figure out if there is a significant relationship between the basic mathematical skills and attitude towards mathematics. Specifically, it examines whether a statistically significant correlation exists between these variables, hypothesizing that people who are more proficient in basic mathematical skills are more likely to have positive attitudes toward mathematics, whereas less proficient people may have difficulties or negative attitudes toward the subject. To quantify skill levels and attitudes for this inquiry, assessments and questionnaires will be used. Data will then be statistically analyzed to establish the strength and direction of the relationship.

Significance of the Study

This study plays a vital role in assessing the relationship between basic mathematics skills and attitude towards mathematics. The findings from this study can be used as a basis for the teacher to develop new ways or strategies for teaching mathematics. By doing so, teachers will be more productive during discussions and gain new ideas for improving their teaching methods. This will also be beneficial to the students because the strategies that the teacher will be using can capture their

attention fostering meaningful interaction between students and the teacher. Thus, students will find mathematics more engaging to learn.

Also, this study plays a significant role in helping parents as it can provide insights into their children's attitude towards basic mathematics. Parents may come to realize that negative attitude toward mathematics could stem from various factors. In this case, they will be more open and would help them cope with their attitude towards mathematics. In addition, parents can ensure that their son/daughter is taught well by the teacher and getting what they are paying for. Furthermore, this study will benefit the administration upon knowing that new strategies can give more interaction between students and teachers, and training might be provided. Last but not least, this article might be used as related reading for scholars who want to investigate the same subject in the future.

Scope and Delimitation

This study aimed to determine the relationship between the students' basic mathematics skills and their attitude towards mathematics of basic education in one of the Private-Catholic schools in Davao City. Furthermore, this study aims to identify which has a good foundation of basic mathematics skills and who has the most positive attitude toward mathematics either male or female. Also, its goal is to identify whether the students from public or private schools have the skills and attitudes mentioned above.

Moreover, the study will discover only the indicators that are related to basic mathematics skills namely; operation in fractions, operation on decimals, operation on integers, operation on polynomials, and evaluating algebraic expression. Aside

from those indicators mentioned, the researchers will also examine the indicators for attitude specifically; self-perception, beliefs, and mindset. The respondents will be selected from the grade 11 students for the school year 2023-2024. With that being said, this research did not include the other basic education students.

Definition of Terms

The following terms used in this study were defined operationally.

Attitude toward Mathematics - refers to an individual's perception, beliefs, and mindsets about the subject of mathematics. Attitudes towards mathematics can vary widely among individuals and may range from positive and enthusiastic to negative and anxious.

Basic Mathematics Skills - it represents the early stages of acquiring fundamental mathematical knowledge and concepts before progressing to more advanced mathematical topics.

Beliefs in Mathematics - refer to how you think about your own mathematical skills, the nature of mathematics, and the significance of math.

Correlation - refers to a statistical measure that indicates the degree of relationship between two variables.

Mathematical Operations - are the fundamental steps applied to deal with numbers and quantities namely; addition, subtraction, multiplication and division.

Mathematics Skills - the capacity to comprehend, apply, and resolve mathematical problems is referred to as having math abilities.

Mindsets in Mathematics - are your fundamental attitude toward math, whether you believe you can improve or that your abilities in mathematics are fixed.

Self-perception in Mathematics - is how you view your mathematical skills and confidence.

Chapter 2
METHODS

The purpose of this study is to determine if there is a correlation between basic mathematical skills and attitude toward mathematics. This chapter is organized into the following sections: research design, sampling techniques, and research instruments.

Research Design

This study employs a quantitative research design, which entails a systematic approach to the collection and analysis of numerical data. It serves as a potent tool in the identification of patterns, prediction-making, causal relationship examination, and concluding broader populations (Bhandari, 2022). According to Abell (2016), a goal of quantitative research is to maintain objectivity by reducing the influence of the researcher on data collection as much as possible.

The Descriptive Correlational Research Design was appropriate for this study as it allows the researchers to identify the relationship between basic mathematics skills and attitude toward mathematics. The descriptive approach was utilized to describe the characteristics of the population or phenomenon studied. Additionally, a correlational method was employed to determine if the basic mathematics skills and attitude toward mathematics have a relationship or it does not.

Research Respondents

The researchers decided to involve the grade-11 students who are studying during the 2023-2024 school year, to examine their basic mathematics skills and attitude towards mathematics. In determining the respondents of the study, the researchers utilized stratified random sampling technique. According to Hayes 2023)

stratified random sampling is a sampling technique where a population is divided into smaller subgroups called strata. These strata are created based on shared attributes or characteristics of the population, such as income or educational level. This sampling method ensures that the sample consists of participants from various levels of fundamental mathematical skills, enabling the identification of potential differences in attitudes toward mathematics among students with varying skill levels.

This study focuses on grade 11 students enrolled in the academic year 2023-2024 who are studying at the selected school. Students studying in the said school but not in the same grade level were not included in the study.

Research Locale

Figure 1. Research Locale

The researchers chose the selected school as their research site due to its suitability for data collection. The accessibility for respondents was noteworthy, and

their familiarity with the school culture enhanced the research process. Moreover, the math department at the selected school actively engaged in a math intervention program, demonstrating their commitment to supporting students in their academic endeavors. This collaborative effort strengthened the overall research framework and aligned with their goal of conducting a comprehensive study.

Research Instrument

A questionnaire is a document that outlines questions designed to obtain relevant information for research (Cohen, 2013). In this study, a test questionnaire was employed to measure the basic mathematics skills of students. It consists of 50 multiple-choice questions covering all the indicators for basic mathematics skills specifically on the following; operations on fractions, operations on integers, operations on decimals, operations on polynomials, and evaluating algebraic expressions. Each indicator has 10 questions. Pilot testing on the questionnaire was conducted where students were involved. To systematically assess and establish the reliability of the items, the results were analyzed using Cronbach's alpha. This critical step involved an initial evaluation to identify and address potential shortcomings, thereby ensuring the questionnaire's effectiveness and precision in collecting reliable data.

Further, the survey questionnaire used to measure the level of attitude towards mathematics of the respondents was adapted from Pusetr Codes (1996) “Attitude toward Mathematics Inventory". The researchers followed the Likert scale definition type using the following descriptions: strongly agree, agree, undecided, disagree, and strongly disagree with the corresponding score weights of 5, 4, 3, 2, and 1

respectively. It is important to note that there were 30 out of 40 items in the questionnaire that were used because its intent is beyond the scope of the study. Additionally, some items were modified into positive statements to establish consistency. Moreover, the adapted items were put in a table and were grouped according to the identified indicators namely; self-perception, belief and mindset. Each indicator consists of ten (10) statements.

Data Gathering Procedure

In gathering the data, the researchers sought authorization from the school administration, particularly the school president and school principal, to conduct this study inside the campus. Once the researchers received the approval, an orientation for the respondents was initiated. Here the respondents were informed about the nature and the purpose of the study. In addition, the respondents were also informed that it was voluntary and they had the freedom to withdraw. After that, the researcher distributed a consent form to the respondents. Once the respondents provided their agreement, the researchers distributed the questionnaire and allowed them enough time to complete it. The researcher compiled the evaluations that the respondents provided after completing the questionnaire.

Ethical Considerations

One of the most important rules that researchers have to follow is ethics. The following was included to uphold ethical considerations during the course of a study: research study planning, information security, participant privacy and confidentiality, and avoidance of plagiarism. These allow the researchers to further the study's successful goal (Resnik, 2020).

The significance of ensuring that study participants consent voluntarily and free from pressure is highlighted by voluntary participation. Participants are not subjected to undue pressure by researchers, and they are free to withdraw from the study at any time without suffering adverse consequences.

Another crucial ethical component is informed consent. The researchers initiated an orientation to explain the nature of their study and provide participants with the consent form they need to sign. The goal of the research, any potential risks, benefits, and the extent to which their data will be utilized are all disclosed to participants. After the researchers provide participants with the consent form, they allow them time to read through it thoroughly and ask any questions they may have regarding the study, its purpose, potential risks, benefits, and data usage. Once participants fully understand and agree to participate, they have signed the consent form, indicating their informed consent to take part in the research.

Additionally, maintaining confidentiality and anonymity is essential for safeguarding participants' privacy. In maintaining confidentiality, both the researcher and their research adviser have the sole authority to access participants' responses. Also, to ensure anonymity in data presentation, participant names are not mentioned; instead, a coding system is utilized to protect their privacy. Confidentiality ensures that participants' information remains protected and is not disclosed without their explicit consent, while anonymity ensures that no personally identifiable information is linked to the collected data (Kang & Hwang, 2023).

Moreover, integrity requires transparent and honest communication with subjects throughout all stages of the study, including accurate reporting of results and

disclosure of any potential conflicts of interest. It is imperative to emphasize that ethical research also entails refraining from manipulating study outcomes (Mg, 2023). Proper citation of authors is another crucial aspect of research ethics. It involves giving credit to the original creators of ideas, theories, or findings that are utilized in a study. Failure to cite sources accurately can lead to plagiarism, which undermines academic integrity and the trustworthiness of the research.

For instance, in this paper discussing the importance of a positive attitude towards mathematics, citing the works of psychologists and educators who conducted relevant studies is essential. By acknowledging their contributions, researchers not only respect intellectual property rights but also contribute to the collective advancement of knowledge in their field. By upholding these ethical principles, researchers in quantitative research safeguard the rights and well-being of their participants while also preserving the integrity and credibility of their work (Horkoff & Publisher, 2015).

Data Analysis

The researchers gathered both primary and secondary data and then organized, compiled, and tabulated the information. After the data was analyzed, it was presented in tables for clarity. To gain insights from the data, the researchers employed specific statistical tools tailored to each research question. For Research Question Number 1, which aims to determine the demographic profile of the respondents in terms of sex, and type of school, the researchers utilized Frequency and Percentage Distribution. This tool will help them understand the distribution and proportions of different demographic categories within the sample.

Moving on to Research Questions number 2, 3, 4, and 5, where the focus is on assessing the average level of basic mathematics skills among the respondents and their attitude towards mathematics using a Likert Scale, the researchers used two key statistical measures: mean and standard deviation. The Mean provides the average score for the mathematics skills, giving an overall indication of the respondents' proficiency. On the other hand, Standard Deviation indicates the level of variation in the scores, helping to understand the spread or consistency of the skills (Mazana, 2019).

To address Research Question number 6, which aims to explore the relationship between basic mathematics skills and attitude toward mathematics, the researchers employed the Pearson Correlation Coefficient. This statistical measure was not only to determine if a relationship exists between the two variables but also to quantify the strength and direction of the relationship using the *"r"* value. A positive *"r"* value indicates a positive correlation, while a negative *"r"* value indicates a negative correlation. The closer the *"r"* value is to 1 or -1, the stronger the association between the variables, while an *"r"* value closer to 0 indicates a weaker or no linear association (Turney, 2024).

By using these specific statistical tools for each research question, the researchers could draw meaningful conclusions from the data and gain a deeper understanding of the relationship between demographic factors, mathematics skills, and attitudes towards mathematics among the respondents.

Table 1. Table Interpretation on the Level of Basic Mathematics Skills in the Basic Topics in Mathematics

Range of Means	Description	Interpretation
8.1 – 10.0	Advanced	The student at this level exceeds the core requirements in terms of knowledge, skills, and understanding of their ability to perform the basic operation on decimals, fractions, integers, polynomials, and evaluating algebraic expressions.
6.1 - 8.0	Proficient	The student at this level have developed the fundamental knowledge skills and core understanding in their ability to perform the basic operation on decimals, fractions, integers, and polynomials, and evaluating algebraic expressions.
4.1 – 6.0	Approaching Proficiency	The student at this level has developed the fundamental knowledge skills and core understandings and, with little guidance from the teacher and/or with some assistance from peers, and understanding in their ability to perform the basic operation on decimals, fractions, integers, polynomials, and evaluating algebraic expression.
2.1 – 4.0	Developing	The student at this level possesses the minimum knowledge and skills and core understandings and, but needs help throughout the understanding in their ability to perform the basic operation on decimals, fractions, integers, polynomials, and evaluating algebraic expression.
0 – 2.0	Beginning	The student at this level struggles with his/her understanding; prerequisite and fundamental knowledge and/or skills have not been acquired or developed

		adequately to aid understanding in their ability to perform the basic operation on decimals, fractions, integers, polynomials, and evaluating algebraic expression.

Table 2. Table Interpretation on the Level of Basic Mathematics Skills

Range of Test Scores	Description	Interpretation
40.1 – 50.0	Advanced	The student at this level exceeds the core requirements in terms of knowledge, and skills in performing mathematical operations on decimals, fractions, integers, polynomials, and evaluating algebraic expression.
30.1 – 40.0	Proficient	The student at this level has developed the fundamental knowledge and skills in performing mathematical operations on decimals, fractions, integers, polynomials, and evaluating algebraic expressions.
20.1 – 30.0	Approaching Proficiency	The student at this level has developed the fundamental knowledge and skills with little guidance from the teacher and/or with some assistance from peers.
10.1 – 20.0	Developing	The student at this level possesses the minimum knowledge and skills and needs help throughout the performance of authentic tasks.
0 – 10.0	Beginning	The student at this level struggles with his/her understanding; prerequisite and fundamental knowledge and/or skills have not been acquired or developed adequately to aid understanding.

Table 1 and Table 2 were adopted to conform with the specifications outlined in Department of Education (DepEd) Order No. 73, issued in 2012, titled "Guidelines on the Assessment and Rating of Learning Outcomes Under the K to 12 Basic

Education Curriculum". This adoption was necessary because these tables will assist in the interpretation and analysis of data in this study, specifically in describing the level of basic mathematics proficiency among students in terms of operations in decimals, operations in fractions, operations in integers, operations in polynomials, and evaluating algebraic expression (Table 1), as well as when grouped according to sex and type of school (Table 2).

Table 3. Table Interpretation on the Attitude of Students toward Mathematics

Range of Means	Description	Interpretation
4.21 - 5.00	Very High	This means that the students have a very positive attitude toward mathematics.
3.41 - 4.20	High	This means that the students have a positive attitude toward mathematics.
2.61 - 3.40	Average	This means that the students have an average positive attitude toward mathematics.
1.81 - 2.60	Low	This means that the students have a fair positive attitude toward mathematics.
1.00 - 1.80	Very Low	This means that the students have negative attitude toward mathematics.

Table 4. The Quantitative Interpretation of the Degree of Relationship of Pearson Correlation Coefficient

R	**Descriptive Level**
$\pm$ 1.00	Perfect Correlation
between $\pm$ 0.75 to $\pm$ 0.99	High Positive (Negative) Correlation
between $\pm$ 0.51 to $\pm$ 0.74	Moderately High Positive (Negative) Correlation
between $\pm$ 0.31 to $\pm$ 0.50	Moderately Low Positive (Negative) Correlation
between $\pm$0.01 to $\pm$ 0.30	Low Positive (Negative) Correlation
0.00	No Correlation

Chapter 3
RESULTS AND DISCUSSION

The presentation, tabulation, analyses, and interpretation of the data acquired throughout this investigation's conduct are covered in this chapter. The order of the Statements of the Problem in Chapter 1 served as the basis for the presentation's layout.

Research Question #1: ***What is the demographic profile of the students in terms of sex and type of school?***

Table 5: The Demographic Profile of the Respondents

Sex	**Frequency**	**Percentage**
F	99	67%
M	49	33%
Total	**148**	**100%**
Type of School	**Frequency**	**Percentage**
Private	62	42%
Public	86	58%
Total	**148**	**100%**

Table 5 presents the demographic profile of the respondents based on their sex and type of school of origin. According to the table, there was a total of 99 (67%) of respondents who are female, and 49 (33%) of respondents who are male. On the other hand, in terms of school of origin, it can be noted that there is a total of 62 (42%) of the respondents came from a private school, while 86 (58%) of respondents came from a public school.

Research Question #2: ***What is the level of basic mathematics skills of students in terms of operations on fractions, operations on integers, operations on decimals, operations on polynomials, and evaluating algebraic expressions?***

Table 6: Level of Basic Mathematics Skills of the Respondents in the Fundamental Mathematics Topics

Indicator	Mean Score	Standard Deviation	Description	Interpretation
Decimals	6.59	2.11	Proficient	The student at this level has developed the fundamental knowledge skills and core understandings and can transfer them independently through authentic performance tasks.
Fractions	4.28	2.38	Approaching Proficiency	The student at this level has developed the fundamental knowledge skills and core understandings and, with little guidance from the teacher and/or with some assistance from peers, can transfer these understandings through authentic performance tasks.
Integers	4.71	2.24	Approaching Proficiency	
Polynomials	4.01	2.06	Approaching Proficiency	
Algebraic Expressions	4.55	2.50	Approaching Proficiency	

Table 6 indicates varying levels of proficiency across different mathematical indicators. Among these, decimals stand out as the strongest area, with a mean score of 6.59. This indicates that they have a good grasp of decimal math and students have a level of proficiency. However, their performance is lower when it comes to polynomials, with an average score of 4.0 indicating approaching proficiency. Interestingly, in terms of standard deviation polynomials had the lowest score with 2.06, indicating that their answers are not too spread. In contrast, algebraic expressions had the highest standard deviation of 2.50, signifying a wider spread compared to the other indicator. Overall, while students seem to understand decimals consistently well, their grasp of polynomial concepts is weaker and less consistent.

These results show the opposite of what Siegler (2017) stated that many students never fully understand fractions. It also contradicts the study of Fitri and Prahmana (2019) and (Fuadiah et al., 2016) stated that the pupils continued to commit errors in their approach to the fraction problem primarily, when writing the problem's known components, applying fractional counting operations and often misinterpreted the rules due to their confusion with negative numbers when performing operations involving integers.

Lastly, it negates the study of (Monrat et al., 2022) and Marpa (2019), who stated that secondary pupils make mistakes while adding and subtracting polynomials, display signs inaccurately in challenging problems, and hold certain misconceptions regarding polynomials, it also revealed that the students have difficulties in identifying the number of terms when parentheses are used in the given algebraic terms.

Research Question #3: ***What is the level of students' attitude towards mathematics in terms of self-perception, beliefs, and mindset?***

Table 7: Level of Attitude towards Mathematics of the Respondents

Indicator	Mean Score	Standard Deviation	Description	Interpretation
Self-perception	2.96	0.72	Average	This means that the students have an average positive attitude toward mathematics.
Beliefs	3.81	0.68	High	This means that the students have a positive attitude toward mathematics.
Mindset	3.34	0.78	Average	This means that the students have an average positive attitude toward mathematics.

Table 7 presents the average scores and standard deviations for three key indicators: self-perception, beliefs, and mindsets, offering valuable insights into

respondents' attitudes towards mathematics. Notably, students demonstrate a notably high level of belief in their abilities, reflected by a mean score of 3.81. Conversely, both self-perception and mindset demonstrate an average level of attitude. However, students seem to harbor a more favorable mindset compared to self-perception, as indicated by a mean of 3.34, whereas self-perception registers a mean of 2.96. Regarding standard deviation, belief exhibits the lowest standard deviation at 0.68, while mindset exhibits the highest among the three attitude indicators, with a standard deviation of 0.78. This suggests that students hold more consistent beliefs, but their mindset tends to vary more widely, indicating a better overall attitude towards beliefs.

The findings reveal an average level of self-perception among respondents, indicating a moderate degree of confidence or understanding regarding their abilities and characteristics. Somehow, it contradicts what Kunwar (2021) said that it was observed that students' perceptions of mathematics had a significant impact on their academic achievement. Moreover, respondents demonstrate notably high beliefs, suggesting a strong alignment within the studied context. This also proves the claim that student success and involvement in mathematics classes are directly correlated with their beliefs about mathematics as a subject (Robas et al., 2020). Among the three indicators only the belief is high which supports Markowitz and Forgasz (2017) claim that, even though most students at both grade levels disliked studying mathematics, they still believed it was crucial to learn the subject.

However, it contradicts what Gijsbers et al., (2019) saying that many students were not convinced about the relevance and use of mathematics. Furthermore, the study by Bernardo (2020) states that a growing mathematical mindset positively

affects students' success in acquiring mathematics achievement, according to multiple studies on academic achievement in the subject.

Research Question #4: ***What is the level of basic mathematics skills of students when grouped according to sex and type of school?***

Table 8: Level of Basic Mathematics Skills when grouped according to Sex and Type of School

Sex	Mean	Standard Deviation	Description	Interpretation
Female	24.24	8.31	Approaching Proficiency	The student at this level has developed the fundamental knowledge and skills with little guidance from the teacher and/or with some assistance from peers.
Male	23.92	9.23	Approaching Proficiency	
Type of School	**Mean**	**Standard Deviation**	**Description**	**Interpretation**
Private	24.18	9.05	Approaching Proficiency	The student at this level has developed the fundamental knowledge and skills with little guidance from the teacher and/or with some assistance from peers.
Public	24.10	8.31	Approaching Proficiency	

Table 8 illustrates the proficiency levels in basic mathematics skills among grade 10 students, categorized by sex. Both female and male students demonstrate approaching proficiency levels in basic mathematical skills. However, a noticeable difference in performance is observed, with females outperforming males, as evidenced by their respective mean scores of 24.24 and 23.92. Furthermore, the standard deviation of female scores is lower at 8.31 compared to 9.23 for males, indicating greater consistency in female performance.

Additionally, the table demonstrates proficiency levels in basic mathematics skills among grade 10 students, categorized by the type of school. Both private and

public schools show approaching proficiency in basic math skills. Nonetheless, private schools exhibit a slightly higher mean score of 24.18 compared to 24.10 for public schools, suggesting superior performance among private school students. Furthermore, public school scores display greater consistency, with a standard deviation of 8.31 compared to 9.05 for private schools. This indicates that their scores are closer to one another compared to the scores of private schools.

These findings suggest a slight advantage for female students in math proficiency, contrary to previous research suggesting male superiority in arithmetic (Anjum, 2015). Both female and male students demonstrate proficiency in basic math skills, indicating a solid understanding of fundamental concepts and independent application, as previously discussed (Ajisuksmo & Saputri, 2017). This insight into mean scores highlights a marginally better understanding of basic math among females compared to males (Anjum, 2015).

This trend aligns with research indicating that private school students often display higher engagement and confidence in mastering mathematics, potentially contributing to their slightly superior performance in this study (Shehzadi et al., 2022). The marginally higher mean score for private school students corresponds with research suggesting their tendency to demonstrate higher engagement and confidence in mastering mathematics (Shehzadi et al., 2022). Additionally, previous research by Kasing and Imoro (2017) supports this study's findings, indicating that private school students have greater confidence in mastering mathematics.

Research Question #5: ***What is the level of students' attitude towards mathematics when grouped according to sex, and type of school?***

Table 9: Level of Attitude towards Mathematics in terms of Sex and Type of School

Sex	Mean	Standard Deviation	Description	Interpretation
Female	3.36	0.64	Average	This means that the students have an average positive attitude toward mathematics.
Male	3.39	0.64	Average	This means that the students have an average positive attitude toward mathematics.
Type of School	**Mean**	**Standard Deviation**	**Description**	**Interpretation**
Private	3.29	0.71	Average	This means that the students have an average positive attitude toward mathematics.
Public	3.43	0.58	High	This means that the students have a positive attitude toward mathematics.

Table 9 illustrates the proficiency levels of Attitude towards Mathematics among grade 10 students, categorized by sex. Both male and female students exhibit an average level of attitude toward Mathematics. However, in terms of performance, it can be noted that male performed slightly better than females as can be seen in their mean score which is 3.39 for the male and 3.36 for the female respectively. Further, the scores of the female and male are closer to one another because the Standard Deviation of the female and male is the same which is 0.64.

Regarding the type of school, the table shows differences in students' attitudes and performace in mathematics. Private school students show an average level of attitude towards mathematics, while public school students exhibit a higher level of positivity. In terms of performance, public schools outperform private schools, as evidenced by their mean score of 3.43 compared to 3.29 for private schools. Moreover, the scores of students in public schools are more consistent with each other compared to those in private schools, as indicated by the lower standard deviation of

0.58 for public schools compared to 0.71 for private schools. Ajisuksmo and Saputri (2017) was found that student attitude toward accomplishment is stronger among female students than male ones, which contradicts the findings of Abe and Gbenro (2015) regarding gender differences in attitudes towards mathematics, contribute to the understanding of attitude towards mathematics among students, highlighting the complexity of factors influencing attitudes towards the subject.

This suggests that there is a slightly wider range of attitude scores among students in private schools compared to those in public schools. Furthermore, Akaguri (2013) highlighted the ongoing discussion about the perceived benefits of public versus private education, with a prevailing belief in Ghana and other areas favoring private schools for offering better quality education. These results resonate with the research conducted by Shehzadi et al. (2022), which delved into the attitudes towards mathematics among students enrolled in both private and public schools.

Research Question #6: ***Is there a significant relationship between the students' basic mathematics skills and attitude towards mathematics?***

Table 10: Correlation between Basic Mathematics Skills and Attitude towards Mathematics

Variable	Pearson *r*	Description	*P* - value	Decision of Ho
Basic Mathematics Skills	0.498	Moderately Low Positive Correlation	<.001	Accepted
Attitude towards Mathematics				

Table 10 shows the relationship between basic mathematics skills and attitude towards mathematics. As can be seen in the table, the correlation value is 0.498 with a

corresponding P <.001 which is less than the alpha (0.05). This result implies that there is a relationship between basic mathematics skills and attitude towards mathematics. However, it can be interpreted as a moderately low positive correlation.

This was highly aligned with what Digitale (2018) said, high achievement comes from having a positive attitude, which in turn leads to having an even better attitude and a positive learning cycle. Also, Chen et al., (2019) support the result of this study that a child's academic learning and success are believed to be significantly impacted by a positive attitude, which includes strong interests and self-belief. Pupils who have strong self-confidence have faith in their capacity to succeed effectively in their math studies, conquering their fear of failure (Van der Bergh, 2013). In contrast, students with poor self-confidence do not trust in themselves and hence prefer to avoid facing mathematics challenges (Mazana et al., 2018).

Positive attitudes foster a sense of confidence, motivation, and resilience in the face of mathematical difficulties, which in turn enhances self-efficacy and performance. Proficiency in basic math skills can strengthen individuals' self-efficacy beliefs in math (Zakariya Y. F. 2022). When individuals have a solid foundation of basic math skills, they feel more capable in tackling more advanced mathematical concepts and problems. Conversely, negative experiences, failures, or lack of confidence may reinforce negative attitudes and diminish self-efficacy, creating a cycle that hinders learning and performance in math (Lopez-Garrido, 2023).

Chapter 4
CONCLUSION AND RECOMMENDATION

This chapter comprised the conclusion about the findings and the generated recommendations of the study.

Conclusion

There is a consistent trend of approaching proficiency across the other mathematical indicators, including fractions, integers, polynomials, and algebraic expressions. On the other hand, decimals emerge as the area where students excel the most, suggesting a high level of proficiency. Additionally, students find difficulty in dealing with fractions with the lowest mean score. It can also be noted that females outperform males in terms of mathematical proficiency, with females exhibiting a higher mean score across various mathematical topics. Additional analysis reveals that students from private schools demonstrate higher levels of basic mathematical skills compared to students from public schools.

Further, among the indicators measuring students' attitude toward mathematics. Mindsets show a moderate outlook, followed by self-perception, suggesting a typical level of confidence. Moreover, the data reveals that males generally exhibit a more positive attitude towards math compared to females. These finding highlights gender differences in attitudes towards mathematics and suggests potential implications for educational interventions aimed at promoting positive attitudes towards the subject. Also, students from public schools tend to have a more positive attitude toward math compared to those from private schools, suggesting a potential influence of school environment on students' attitudes and performance in mathematics.

A moderately low positive correlation is the result of the study, indicating a weak relationship between basic mathematics skills and attitude towards mathematics. For students lacking a strong foundation in math, their attitude towards mathematics may not be significantly influenced by their academic performance, whether their scores are high or low. With that, the researchers reject the alternative hypothesis and accept the null hypothesis which states that there is no significant relationship between basic mathematics skills and attitude toward mathematics.

Recommendation

Based on the findings of this study, several recommendations have emerged. For administrators, it is crucial to strengthen the math intervention program based on the study's findings, particularly on core topics such as integers, fractions, polynomials, and algebraic expressions where students demonstrate weaknesses, is recommended. Investment in teaching materials specifically designed to enhance student engagement with mathematics is crucial for the program's effectiveness. Additionally, comprehensive evaluations of the program should be conducted to identify areas for improvement, providing valuable insights for administrators for optimizing intervention strategies and effectively address students' difficulties.

For teachers, they may actively demonstrate the enjoyable aspects of mathematics by embracing engaging teaching approaches. Incorporating visual aids, hands-on manipulatives and interactive games to reinforce conceptual understanding and make math more accessible. Additionally, introducing diverse math vocabulary can deepen comprehension and create a math-rich environment in the classroom.

For future researchers, exploring the role of parental involvement in students' mathematics performance is recommended, as parents may play a significant role in shaping students' attitudes and aptitude towards the subject. Additionally, investigating the commitment levels of mathematics teachers towards teaching the subject could provide valuable insights into factors influencing students' understanding and engagement with mathematics.

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Appendix 1a: Letter of Permission (School President)

HOLY CROSS COLLEGE OF CALINAN, INC
Davao- Bukidnon Highway, Calinan Poblacion, Davao City

February 12, 2024

Sr. Cherie Eloisa Garrote, PM
School President
Holy Cross College of Calinan, Inc.

Dear Sister Garrote,

Greetings of peace and solidarity!

We, Rincy Baguio, Mynell Jake Butaya, Kyan Aldrin Urquiza, James Errol Canonigo and Fran Timothy Acquas, enrolled in the class of Miss Vallerie Joy T. Escolano are writing this letter to inform you that we will be conducting a research study entitled: **THE CORRELATION BETWEEN BASIC MATHEMATICS SKILLS AND ATTITUDE TOWARDS MATHEMATICS** as the major requirement in our Practical Research 1 and 2. The objective of our study aims to assess and to test if there is a significant relationship between the basic mathematics skills of the students and their attitude towards mathematics. Questionnaires will be used to gather data from the Grade 11 students of school year 2023-2024 who are studying at Holy Cross College of Calinan. The result of the study may provide an idea to the institution on organizing seminars or workshops for teachers to acquire strategies in making their teaching more enjoyable and engaging and also it will be part of our contribution to improve the Math Intervention program of the school.

In line of this, we would like to ask permission to conduct a respondents' orientation among the students and administer the questionnaire. Also, confidentiality of the information obtained is assured as there will be no other individuals who have access on them except the researchers and their research adviser.

Participation in this study is completely voluntary, therefore, participants are free to withdraw from the study at any time without moral obligation to the researcher and to the school. Further the participants have the right to verify the data to be included in the final manuscript.

Should you wish to know more about the study, please feel free to contact:

Rincy V. Baguio at **rincybaguio@gmail.com** or **09816304393**

Thank you very much.

Very truly yours,

Rincy Baguio
Researcher

Mynell Jake Butaya
Researcher

Kyan Aldrin Urquiza
Researcher

James Errol Canonigo
Researcher

Fran Timothy Acquas
Researcher

Noted by:

Ms. Vallerie Joy T. Escolano
Research Adviser

Approved by:

Sr. Cherie Elosa Garrote, PM
School President

Complaints about this research:

The Holy Cross College of Calinan requires that all the participants are informed and if they have complaints regarding the manner in which the research is conducted, it may be given to the researcher, or if an independent person is preferred, to the Research and Publication Head, Research Office, Holy Cross College of Calinan with the following numbers: 295-0797 or 09491985644.

Appendix 1b: Letter of Permission (BED Principal)

HOLY CROSS COLLEGE OF CALINAN, INC
Davao- Bukidnon Highway, Calinan Poblacion, Davao City

February 12, 2024

RECEIVED BY :
DATE: 02-12-2024

Dr. Ma. Corazon C. Sunga
Basic Education Principal
Holy Cross College of Calinan, Inc.

Dear Ma'am,

Greetings of peace and solidarity!

We, Rincy Baguio, Mynell Jake Butaya, Kyan Aldrin Urquiza, James Errol Canonigo and Fran Timothy Acquas, enrolled in the class of Miss Vallerie Joy T. Escolano are writing this letter to inform you that we will be conducting a research study entitled: **THE CORRELATION BETWEEN BASIC MATHEMATICS SKILLS AND ATTITUDE TOWARDS MATHEMATICS** as the major requirement in our Practical Research 1 and 2. The objective of our study aims to assess and to test if there is a significant relationship between the basic mathematics skills of the students and their attitude towards mathematics. Questionnaires will be used to gather data from the Grade 11 students of school year 2023-2024 who are studying at Holy Cross College of Calinan. The result of the study may provide an idea to the institution on organizing seminars or workshops for teachers to acquire strategies in making their teaching more enjoyable and engaging and also it will be part of our contribution to improve the Math Intervention program of the school.

In line of this, we would like to ask permission to conduct a respondents' orientation among the students and administer the questionnaire. Also, confidentiality of the information obtained is assured as there will be no other individuals who have access on them except the researchers and their research adviser.

Participation in this study is completely voluntary, therefore, participants are free to withdraw from the study at any time without moral obligation to the researcher and to the school. Further the participants have the right to verify the data to be included in the final manuscript.

Should you wish to know more about the study, please feel free to contact:

Rincy V. Baguio at **rincybaguio@gmail.com** or **09816304393**

Thank you very much.

Very truly yours,

Rincy V. Baguio
Researcher

Mynell Jake N. Butaya
Researcher

Kyan Aldrin Urquiza
Researcher

James Errol Canonigo
Researcher

Fran Timothy Acquas
Researcher

Noted by:

Ms. Valleric Joy T. Escolano
Research Adviser

Approved by:

Dr. Ma. Corazon C. Sunga
Basic Education Principal

Complaints about this research:

The Holy Cross College of Calinan requires that all the participants are informed and if they have complaints regarding how the research is conducted, it may be given to the researcher, or if an independent person is preferred, to the Research and Publication Head, Research Office, Holy Cross College of Calinan with the following numbers: 295-0797 or 09491985644.

Appendix 2a: Letter to the Validator (Panelist 1)

HOLY CROSS COLLEGE OF CALINAN, INC
Davao- Bukidnon Highway, Calinan Poblacion, Davao City

February 12, 2024

Dr. Melina C. Gonzales
Research and Publication Head
Holy Cross College of Calinan, Inc.

Dear, Dr. Melina C. Gonzales

Greetings of peace and solidarity!

We, Rincy Baguio, Mynell Jake Butaya,, Kyan Aldrin Urquiza, James Errol Canonigo and Fran Timothy Acquas, enrolled in the class of Miss Vallerie Joy T. Escolano conducting a research entitled: **THE CORRELATION BETWEEN BASIC MATHEMATICS SKILLS AND ATTITUDE TOWARDS MATHEMATICS**. This study aims to assess if there is a significant relationship between the basic mathematics skills of the students and their attitude towards mathematics and will attempt to gather the responses from the respondents toward the following questions:

1. What is the demographic profile of the students in terms of:
   1.1 sex
   1.2 type of school (grade 10)
2. What is the level of basic mathematics skills of students in terms of:
   2.1 operations on fractions;
   2.2 operations on integers;
   2.3 operations on decimals;
   2.4 operations on polynomials; and
   2.5 evaluating algebraic expression?
3. What is the level of students' attitude towards mathematics in terms of:
   3.1 self-perception;
   3.2 beliefs; and
   3.3 mindset?
4. What is the level of basic mathematics skills of students when grouped according to:
   4.1 sex; and
   4.2 type of school (grade 10)?
5. What is the level of students' attitude towards mathematics when grouped according to:
   5.1 sex; and
   5.2 type of school (grade 10)?
6. Is there a significant relationship between the students' basic mathematics skills and attitude towards mathematics?

May we request your kind assistance in validating the questionnaire of the research study. Would you please fill out the attached validation sheet and give suggestions/comments for the improvement of our questionnaire.

Should you wish to know more about the study, please feel free to contact:

Rincy Baguio at **rincybaguio@gmail.com** or **09816304393**

Thank you very much for your help.

Very truly yours,

Rincy Baguio
Researcher

Mynell Jake Butaya
Researcher

Kyan Aldrin Urquiza
Researcher

James Errol Canonigo
Researcher

Fran Timothy Acquas
Researcher

Noted by:

Ms. Vallerie Joy T. Escolano
Research Adviser

Approved By:

Dr. Melina C. Gonzales
Validator

Appendix 2b: Letter to the Validator (Panelist 2)

HOLY CROSS COLLEGE OF CALINAN, INC
Davao- Bukidnon Highway, Calinan Poblacion, Davao City

February 12, 2024

Mr. Edzel S. Langga
Math Teacher
Holy Cross College of Calinan, Inc.

Dear, Mr. Edzel S. Langga

Greetings of peace and solidarity!

We, Rincy Baguio, Mynell Jake Butaya,, Kyan Aldrin Urquiza, James Errol Canonigo and Fran Timothy Acquas, enrolled in the class of Miss Vallerie Joy T. Escolano conducting a research entitled: **THE CORRELATION BETWEEN BASIC MATHEMATICS SKILLS AND ATTITUDE TOWARDS MATHEMATICS**. This study aims to assess if there is a significant relationship between the basic mathematics skills of the students and their attitude towards mathematics and will attempt to gather the responses from the respondents toward the following questions:

1. What is the demographic profile of the students in terms of:
   1.1 sex
   1.2 type of school (grade 10)
2. What is the level of basic mathematics skills of students in terms of:
   2.1 operations on fractions;
   2.2 operations on integers;
   2.3 operations on decimals;
   2.4 operations on polynomials; and
   2.5 evaluating algebraic expression?
3. What is the level of students' attitude towards mathematics in terms of:
   3.1 self-perception;
   3.2 beliefs; and
   3.3 mindset?
4. What is the level of basic mathematics skills of students when grouped according to:
   4.1 sex; and
   4.2 type of school (grade 10)?
5. What is the level of students' attitude towards mathematics when grouped according to:
   5.1 sex; and
   5.2 type of school (grade 10)?
6. Is there a significant relationship between the students' basic mathematics skills and attitude towards mathematics?

May we request your kind assistance in validating the questionnaire of the research study. Would you please fill out the attached validation sheet and give suggestions/comments for the improvement of our questionnaire.

Should you wish to know more about the study, please feel free to contact:

Rincy Baguio at **rincybaguio@gmail.com** or **09816304393**

Thank you very much for your help.

Very truly yours,

Rincy Baguio
Researcher

Mynell Jake Butaya
Researcher

Kyan Aldrin Urquiza
Researcher

James Errol Canonigo
Researcher

Fran Timothy Acquas
Researcher

Noted by:

Ms. Vallerie Joy T. Escolano
Research Adviser

Approved By:

Mr. Edzel S. Langga
Validator

Appendix 3: Validated Survey Questionnaire

1= Never 2= Rarely 3= Sometimes 4=Often 5= Very Often

	A. Self-Perception	1	2	3	4	5
1	I am good at solving Math problems.					
2	I get a great deal of satisfaction out of solving a Mathematics problem.					
3	The thought of solving Math problems is becoming less intimidating for me.					
4	I am able to solve Mathematics problems without too much difficulty.					
5	I am confident that I could learn advanced Mathematics.					
6	I can perform well in any Math class I enroll in.					
7	I can think of many ways that I use Math outside of school.					
8	I am comfortable expressing my own ideas on how to look for solutions to a difficult problem in Math.					
9	I would prefer to do an assignment in Math than to write an essay.					
10	Mathematics is something that I find challenging.					

	B. Beliefs	1	2	3	4	5
1	Mathematics is a very interesting subject.					
2	Mathematics is important in everyday life.					
3	Mathematics is one of the most important subjects for people to study.					
4	Mathematics is worth to study and necessary subject.					
5	Mathematics helps develop the mind and teaches a person to think.					
6	Studying Math helps me with problem solving in other areas.					
7	I believe studying advanced Mathematics is useful.					
8	I believe high school Math courses would be very helpful no matter what I decide to study.					
9	I believe that a strong Math background could help me in my professional life.					
10	I believe when I hear the word Mathematics, I can find aspects to appreciate and enjoy.					

	C. Mindsets	1	2	3	4	5
1	I'm making Math more fun and engaging for myself.					
2	I'm trying to think about Math in a better way and approach it with a positive attitude.					
3	I'm finding ways to approach Mathematics study with less anxiety.					
4	I'm practicing to stay focused and think clearly when I work on Mathematics.					
5	I'm actively working on reducing stress during Math class.					
6	I am working to improve my understanding in my Mathematics class.					
7	I'm becoming more self-assured when I approach Mathematics.					
8	I feel really sure about Math, and I think with practice, I can keep getting better.					
9	I am not scared of Mathematics; in fact, I see it as a challenge I'm ready to take on with confidence.					
10	I'm willing to explore Mathematics for the benefit of my college career.					

Appendix 4a: Validator's Sheet (Panelist 1)

Holy Cross College of Calinan, Inc
Davao-Bukidnon Highway, Calinan Pobalcion, Davao City

Research Assessment Tool and Validation Sheet

Name of Evaluator : Dr. Melina C. Gonzales
Degree : _____
Position : Research and Publication Head
Institution : Holy Cross College of Calinan, Inc

To the Evaluator: Please check the appropriate box for your ratings.

POINT EQUIVALENT: 1 – Poor 3 – Good 5 - Excellent
2 - Fair 4 – Very Good

	Criteria/ Indicators	1	2	3	4	5
1	**CLARITY OF DIRECTIONS AND ITEMS** The vocabulary level, language structure and conceptual level of questions suit to level of respondents. The test directions and items are written in clear and understandable manner.			✓		
2	**PRESENTATION/ ORGANIZATION OF ITEMS** The items are presented and organized in logical manner.			✓		
3	**SUITABILITY OF ITEMS** The items appropriately represent the substance of the research. The questions are designed to determine the condition, knowledge, perception and attitudes that are supposed to be measured.			✓		
4	**ADEQUATENESS OF ITEMS PER CATEGORY** The items represent the coverage of the research adequately. The number of questions per area category is representative enough of all the question needed for the research.			✓		
5	**ATTAINMENT OF PURPOSE** The instrument as a whole fulfills the objectives for which it was constructed.				✓	
6	**OBJECTIVE** Each item question requires only one specific answer or measure only one behavior and no aspect of questionnaire suggest bias on the part of the researcher.				✓	
7	**SCALE AND EVALUATION RATING SYSTEM** The scale adapted is appropriate for the items.				✓	

Comments and Suggestions: _____

_____
Signature Evaluator

Appendix 4b: Validator's Sheet (Panelist 2)

Holy Cross College of Calinan, Inc
Davao-Bukidnon Highway, Calinan Pobalcion, Davao City

Research Assessment Tool and Validation Sheet

Name of Evaluator : Mr. Edzel Langga
Degree : _____
Position : Math Teacher
Institution : Holy Cross College of Calinan, Inc
To the Evaluator: Please check the appropriate box for your ratings.
POINT EQUIVALENT: 1 – Poor 3 – Good 5 - Excellent
2 - Fair 4 – Very Good

	Criteria/ Indicators	1	2	3	4	5
1	**CLARITY OF DIRECTIONS AND ITEMS** The vocabulary level, language structure and conceptual level of questions suit to level of respondents. The test directions and items are written in clear and understandable manner.					✓
2	**PRESENTATION/ ORGANIZATION OF ITEMS** The items are presented and organized in logical manner.					✓
3	**SUITABILITY OF ITEMS** The items appropriately represent the substance of the research. The questions are designed to determine the condition, knowledge, perception and attitudes that are supposed to be measured.				✓	
4	**ADEQUATENESS OF ITEMS PER CATEGORY** The items represent the coverage of the research adequately. The number of questions per area category is representative enough of all the question needed for the research.					✓
5	**ATTAINMENT OF PURPOSE** The instrument as a whole fulfills the objectives for which it was constructed.				✓	
6	**OBJECTIVE** Each item question requires only one specific answer or measure only one behavior and no aspect of questionnaire suggest bias on the part of the researcher.					✓
7	**SCALE AND EVALUATION RATING SYSTEM** The scale adapted is appropriate for the items.				✓	

Comments and Suggestions: _____

Edzel Langga
Signature Evaluator

HOLY CROSS COLLEGE OF CALINAN, INC.
Davao- Bukidnon Highway, Calinan Poblacion, Davao City

THE CORRELATION BETWEEN BASIC MATHEMATICS SKILLS AND ATTITUDE TOWARDS MATHEMATICS

I, _____, agree to participate in the study in which purpose is to examine the relationship of basic mathematics skills and attitude towards and to measure the level of basic mathematics skills and the level of attitude towards mathematics. I am fully aware that the study will be conducted by Rincy Baguio, Mynell Jake Butaya, Kyan Aldrin Urquiza, James Errol Canonigo and Fran Timothy Acquas and will be supervised by Ms. Vallerie Joy T. Escolano, their research adviser.

Before the onset of the study, the researchers explained to me the nature and extent of my involvement in this project. Also, during the orientation, respondents were informed of the following:

a. that there are no known risks in our participation;
b. that my participation will involve into the pilot testing of the test questionnaire about the level of basic mathematics skills of the respondents;
c. that the information they obtained from me will be kept confidential and that only them and their research adviser will have access on it; and
d. that my name and the organization where I am connected will never be mentioned in the final report.

In this study, my participation is entirely voluntary and I am free to withdraw at any time without affecting my relationship with the researchers and Holy Cross College of Calinan.

For possible queries and complaints regarding the conduct of the study, contact details of the researchers and their adviser, Ms. Vallerie Joy T. Escolano are provided.

_____ _____
Participant's signature Date

Rincy V. Baguio _____
Researcher's signature Date

Complaints about this research:

This project has been approved by his/their research adviser. Should you have concerns about your rights as a participant in this research, or should you have a complaint about the manner in which the research is conducted, please feel free to contact Miss Vallerie Joy T. Escolano through his/her number ***(09083357966)*** or email him/her at ***(evalleriejoy@gmail.com)***. Alternatively, you can direct your queries to the school's Research and Publication Officer through number: 2950797.

Appendix 6: Inform Parental Consent

HOLY CROSS COLLEGE OF CALINAN, INC
Davao-Bukidnon Highway, Calinan Poblacion, Davao City

INFORMED PARENTAL CONSENT FORM

THE CORRELATION BETWEEN BASIC MATHEMATICS SKILLS AND ATTITUDE TOWARDS MATHEMATICS

Dear Mr/Mrs _____,

Introduction: This form is designed to provide you, as a parent, with essential information regarding our research study and your child's potential participation. The researcher will take the time to describe the study, address all your questions, and, should you decide to permit your child's involvement, this form will be used respectfully to record your permission. We appreciate your thoughtful consideration in this matter.

Description: This study will examine the relationship between basic mathematics skills and attitude towards and measure the level of basic mathematics skills and the level of attitude towards mathematics.

Confidentiality: Children's answers will be not be associated with their name. Rather, each child will be given an identification number on the data analysis.

Risks & Benefits: There are no anticipated risks associated with your child's participation. The study involves gathering information through surveys or assessments. We have taken careful measures to design the study with the utmost consideration for your child's well-being.

Freedom to Withdraw or Refuse Participation: Participation in our research is entirely voluntary. Your child has the freedom to withdraw or refuse participation at any point without facing any negative consequences.

Grievance Procedure: If I have any concerns or am dissatisfied with any aspect of this study, I may report my grievances anonymously to the Research and Publication Office through the following numbers: 295-0797 or 09491985644

For questions, please feel free to ask the researchers any questions before signing the consent form or at any time during or after the study.

Lead Researcher: Rincy V. Baguio Contact Details: 09816304393
Research Adviser: Ms. Vallerie Joy T. Escolano Contact Details: 09083357966

Informed Consent Statement

I, _____, give permission for my child, _____ to participate in the research project entitled, "**THE CORRELATION BETWEEN BASIC MATHEMATICS SKILLS AND ATTITUDE TOWARDS MATHEMATICS.** The study has been explained to me and my questions answered to my satisfaction. I understand that my child's right to withdraw from participating or refuse to participate will be respected and that his/her responses and identity will be kept confidential. I give this consent voluntarily.

Parent/Guardian Name and Signature: _____ Date: _____
Lead Researcher's Name and Signature: **Rincy V. Baguio** Date: _____

Appendix 7: Letter to the Math Teacher

HOLY CROSS COLLEGE OF CALINAN,INC
Davao- Bukidnon Highway, Calinan Poblacion, Davao City

August 10, 2023

Shogar T. Echavez, MA
Math Teacher
Lamanan National High School

Dear Ma'am,

Greetings of peace and solidarity!

I hope this letter finds you well. We are currently involved in an important research study titled "The Correlation between Basic Mathematics Skills and Attitude Towards Mathematics." The objective of our study is to investigate the potential relationship between foundational mathematics skills and individuals' attitudes towards the subject. We are writing to kindly request your assistance and expertise in developing a test questionnaire to assess basic mathematics skills for this research.

Recognizing your extensive knowledge and experience in the field of mathematics, we are confident that your input would be invaluable in shaping a well-designed questionnaire that accurately measures participants' proficiency in basic mathematical concepts.

The primary aim of this research is to explore whether there is a significant correlation between an individual's mastery of fundamental mathematical skills and their overall attitude towards mathematics. By creating a robust questionnaire, we hope to gather reliable data that can shed light on this relationship and contribute to our understanding of mathematics education.

We would greatly appreciate your collaboration in crafting a set of comprehensive and well-structured questions that effectively evaluate participants' basic mathematics skills. Your guidance in ensuring the validity and reliability of the assessment tool would be instrumental in the success of this research.

If you are available for a brief meeting or discussion, either in person or through virtual means, we would be more than willing to accommodate your schedule. Alternatively, if you prefer to communicate via email or phone, we are open to any form of interaction that suits you best.

Your contribution to this study will be duly recognized in the research documentation, and your insights will undoubtedly enhance the quality and impact of the final results.

Thank you for considering our request, and we are looking forward to the possibility of collaborating with you on this significant endeavor. Please feel free to contact us at 09816304393 or rincybaguio@gmail.com to discuss this further.

Once again, we appreciate your time and expertise and eagerly await your response.

Thank you very much.

Very truly yours,

Rincy V. Baguio
Researcher

Mynell Jake N. Butaya
Researcher

Kyan Aldrin M. Urquiza
Researcher

James Errol R. Canonigo
Researcher

Fran Timothy F. Acquas
Researcher

Noted by:

Vallerie Joy T. Escolano
Research Adviser

Approved by:

Shogar T. Echavez, MA
Math Teacher

Complaints about this research:

The Holy Cross College of Calinan requires that all the participants are informed and if they have complaints regarding the manner in which the research is conducted, it may be given to the researcher, or if an independent person is preferred, to the Research and Publication Head, Research Office, Holy Cross College of Calinan with the following numbers: 295-0797 or 09491985644.

Appendix 7: Raw Data of Pilot Testing

	R No. 1	R No. 2	R No. 3	R No. 4	R No. 5	R No. 6	R No. 7	R No. 8	R No. 9	R No. 10	R No. 11	R No. 12	R No. 13	R No. 14	R No. 15	R No. 16	R No. 17	R No. 18	R No. 19	R No. 20	R No. 21	R No. 22	R No. 23	R No. 24	R No. 25	R No. 26	R No. 27	R No. 28	R No. 29	R No. 30		Total
Q1	0	1	0	0	1	1	1	1	1	1	0	1	1	1	1	1	1	0	1	1	1	0	0	1	1	1	0	0	1	1		21
Q2	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0	1	0	1	1	1	1	0	0	0	1	0		21
Q3	0	1	0	0	1	1	1	1	1	1	0	1	1	0	1	1	1	0	0	0	1	1	1	1	0	0	0	0	0	0		16
Q4	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	1	1	1	0	1	0	1	1		23
Q5	0	1	0	0	1	1	1	0	1	1	0	0	1	0	1	0	0	1	1	0	0	1	0	1	0	0	0	0	0	0		12
Q6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
Q7	0	1	1	1	0	0	1	1	1	1	0	1	1	1	1	0	0	0	0	0	1	1	1	1	1	0	0	1	0	1		18
Q8	0	1	0	0	1	1	1	1	1	1	1	1	0	1	1	0	0	1	1	0	0	0	1	1	1	0	1	1	0	0		18
Q9	0	0	1	0	0	0	1	0	1	1	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	1	0	1	0	0		9
Q10	1	0	0	1	1	1	1	1	1	1	1	0	1	1	1	0	0	0	0	0	0	0	1	0	0	1	1	0	1	0		16
Q11	0	0	0	0	0	0	1	1	1	1	1	0	0	0	1	0	0	0	0	1	0	1	0	1	1	0	0	0	1	1		12
Q12	0	0	0	1	0	0	1	0	1	1	1	0	0	0	1	0	0	0	1	1	0	0	0	0	1	1	0	0	0	0		10
Q13	0	1	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0		8
Q14	0	1	0	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0		5
Q1	0	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	0	0	1	1	1	1	0	0	1	1	1		23

5																																	
Q16	0	1	1	1	0	1	0	1	1	1	1	0	1	0	1	1	1	0	0	1	0	1	1	0	1	0	1	0	0	0		17
Q17	0	1	0	1	1	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	1	0	1	1	0	0	0	0	0	1		14
Q18	0	1	1	0	0	0	1	0	1	1	0	1	0	1	1	1	1	0	0	0	1	1	0	0	1	0	0	1	1	1		16
Q19	0	1	0	0	0	0	1	1	1	1	1	1	0	1	1	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0		13
Q20	0	1	0	1	1	0	1	0	0	1	1	1	0	0	0	1	0	1	0	0	0	0	1	0	0	1	1	1	0	0		13
Q21	1	1	0	1	1	1	1	0	1	1	0	0	0	1	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	1		14
Q22	0	0	0	0	0	1	1	1	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0		9
Q23	0	1	0	0	0	0	1	1	1	1	0	1	0	1	0	1	1	1	0	1	1	1	0	0	1	1	0	0	0	1		16
Q24	1	0	0	0	1	1	1	0	0	1	0	0	0	0	0	1	1	0	1	0	0	1	0	1	0	1	0	0	0	0		11
Q25	0	1	0	1	1	1	1	1	0	1	1	0	0	1	0	1	1	0	0	1	0	1	1	0	1	0	1	0	0	1		17
Q26	0	1	1	0	0	1	0	0	1	1	1	0	0	0	1	1	1	0	0	0	1	1	1	0	1	0	1	0	0	1		15
Q27	1	0	1	0	0	1	1	0	1	1	0	0	1	1	1	0	0	0	1	0	0	1	1	1	1	0	0	0	0	0		14

Q28	0	0	1	0	1	1	1	0	1	1	0	0	0	1	0	1	1	0	1	0	1	0	0	1	1	0	0	1	0	1		15
Q29	1	1	1	0	1	1	1	1	1	1	1	0	0	1	1	0	0	0	1	0	1	0	1	0	0	0	0	1	0	0		16
Q30	1	0	1	0	0	1	1	1	1	1	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	1	1	0	1	1		16
Q31	0	1	0	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0		9
Q32	0	1	1	1	0	1	1	1	1	1	0	1	1	1	0	1	1	1	0	0	0	1	1	0	0	0	1	1	0	0		18
Q33	1	1	1	0	1	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	1	1		13
Q34	0	0	0	0	1	0	1	0	1	1	1	1	0	0	0	1	0	0	0	1	0	0	1	0	1	0	0	0	0	0		10
Q35	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	1		8
Q36	1	0	0	0	0	0	1	0	1	1	1	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	0		8
Q37	0	0	1	0	0	1	1	1	0	1	0	0	0	0	0	1	1	0	0	1	0	0	1	0	0	0	0	0	0	1		10
Q38	0	1	0	0	0	0	1	1	1	1	0	1	1	1	0	0	1	0	0	1	1	1	1	0	0	0	1	1	0	1		16
Q39	1	1	1	0	0	0	1	1	1	1	1	0	0	1	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0		16
Q40	1	0	1	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0		9

Q41	0	1	1	1	0	0	1	1	1	1	0	0	1	0	0	0	1	1	0	1	0	1	0	0	0	1	0	0	0	0		13
Q42	0	1	1	1	0	0	1	1	1	1	1	0	1	1	1	1	1	1	0	1	0	1	1	1	0	0	0	0	1	0		19
Q43	0	1	0	1	0	0	1	1	1	1	0	0	1	1	0	1	1	0	0	0	0	1	1	1	0	0	0	0	0	1		14
Q44	1	1	1	0	0	0	1	0	1	1	0	0	1	0	0	0	0	1	0	0	0	1	1	1	0	0	1	0	0	0		12
Q45	0	1	0	0	0	0	1	1	1	1	0	0	0	1	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0		11
Q46	0	0	0	1	1	0	1	1	1	1	0	0	0	0	1	0	0	1	0	0	0	1	1	0	1	0	0	0	1	0		12
Q47	0	0	1	1	1	0	1	0	1	1	1	0	0	0	1	1	1	0	0	1	1	0	0	1	0	0	0	0	0	0		13
Q48	0	1	0	0	0	0	1	1	1	1	1	0	1	1	0	1	1	0	0	1	1	1	1	1	0	0	1	1	1	0		18
Q49	0	1	1	1	1	0	1	1	1	1	0	0	1	1	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	1		17
Q50	1	0	1	0	0	1	1	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0	0	1		10
Total Score	13	32	23	17	20	24	47	29	44	47	19	15	19	26	25	21	21	17	12	24	17	27	28	20	22	13	18	11	13	20		

Appendix 8: Result of Pilot Testing

Reliability

[DataSet1]

Warnings

The determinant of the covariance matrix is zero or approximately zero. Statistics based on its inverse matrix cannot be computed and they are displayed as system missing values.

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	30	100.0
	Excluded[a]	0	.0
	Total	30	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.821	.822	24

Item Statistics

	Mean	Std. Deviation	N
VAR00001	.4667	.50742	30
VAR00002	.5000	.50855	30
VAR00003	.5333	.50742	30
VAR00004	.5333	.50742	30
VAR00005	.3000	.46609	30
VAR00006	.6000	.49827	30
VAR00007	.4333	.50401	30
VAR00008	.3333	.47946	30
VAR00009	.2667	.44978	30
VAR00010	.2667	.44978	30
VAR00011	.3333	.47946	30
VAR00012	.5333	.50742	30
VAR00013	.5333	.50742	30
VAR00014	.3000	.46609	30

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	.440	.267	.633	.367	2.375	.012	24

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
VAR00001	10.1000	25.334	.332	.	.816
VAR00002	10.0667	26.064	.186	.	.822
VAR00003	10.0333	25.551	.289	.	.818

Appendix 9: Sample Test Questionnaire (Pilot Testing)

R 59

HOLY CROSS COLLEGE OF CALINAN, INC.
Davao- Bukidnon Highway, Calinan Poblacion, Davao City

SURVEY QUESTIONNAIRE

THE CORRELATION BETWEEN BASIC MATHEMATICS SKILLS AND ATTITUDE TOWARDS MATHEMATICS

We are conducting a correlational study of the students' basic mathematics skills and attitudes towards mathematics. Your response to this survey is crucial in providing the necessary information.

If you have any queries about the questionnaire, please do not hesitate to approach any of the researchers. Your honest and sincere response and the time given to answer the evaluation is greatly appreciated.

Thank you very much for your cooperation.

Instruction: Please check or supply the information needed in the space provided.

Name (Optional) _____

Part I: Demographic Profile

1. Sex
   [ ] Male [ ] Female
2. Type of School (Grade 10)
   [ ] Private [ ] Public

Part II: Level of Basic Mathematics Skills

21

Part 2.1: Multiple Choice. Read and understand each item. Write the letter that corresponds to your answer before each number.

d 1. What is the sum of 2.8 and 0.782?
a. 2.1380 b. 2.8782 c.3.852 d. 3.582

d 2. What is the total when you added 3.82 and 12.5?
a. 5.17 b. 5.25 c.16.23 d. 16.32

b 3. What would be value of N in order to make the equation 15.26 + N = 125.13 CORRECT?
a. 109.78 b. 109.87 c. 110.13 d. 110.31

c 4. What is 6.75 – 4.5?
a. -11.25 b. -2.25 c. 2.25 d. 11.25

c 5. What would be the value of N in order to make the equation 15.2 – N = 11.6 TRUE?
a. 1.6 b. 2.6 c. 3.6 d. 4.6

c 6. What is the differenee when you subtracted 0.8692 by 0.214?
a. 0.4552 b. 0.5552 c. 0.6552 d. 0.9482

c 7. What is 3.6 x 5.3?
a. 1908 b. 190.8 c. 19.08 d. 1.908

b 8. What is the value of N in the equation 12.2 x 0.3 = N?
a. 3.36 b. 3.66 c. 6.36 d. 6.63

b 9. What is the quotient when you divided 258 by 0.6?
a. 430 b. 4.30 c. 43.0 d. 40.3

d 10. What is the value of N in the equation 0.28 ÷ 4 = N?

General Raw Data

Rpdnt No.	Sex	School	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Score	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Score	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30	Score	Q31	Q32	Q33	Q34	Q35	Q36	Q37	Q38	Q39	Q40	Score	Q41	Q42	Q43	Q44	Q45	Q46	Q47	Q48	Q49	Q50	Score	TOTAL SCORE
Rpdnt001	F	Private	1	1	1	1	1	1	1	1	0	1	**9**	1	1	1	0	1	1	1	0	0	0	**6**	1	0	0	1	1	1	0	1	1	1	**7**	0	1	1	0	0	0	1	0	0	0	**3**	1	1	1	0	1	0	1	1	0	0	**6**	**31**
Rpdnt002	M	Public	1	1	0	1	1	1	1	1	0	1	**8**	0	0	0	1	1	1	1	0	0	1	**5**	1	0	0	0	1	1	1	0	1	1	**6**	0	0	0	1	1	0	1	0	1	0	**4**	1	0	0	0	0	0	0	1	1	0	**3**	**26**
Rpdnt003	F	Private	1	1	1	1	0	1	0	1	0	1	**7**	0	0	0	0	1	0	1	1	0	0	**3**	0	0	1	0	0	0	1	0	0	0	**2**	0	1	0	0	0	0	0	0	0	0	**1**	1	1	1	0	0	0	0	0	0	0	**3**	**16**
R	M	P	1	0	1	1	1	0	1	1	0	1	**7**	0	0	0	0	0	1	0	1	0	0	**2**	1	0	0	1	1	0	0	0	1	0	**4**	0	0	0	0	0	0	0	0	1	0	**1**	1	1	0	1	0	0	0	1	0	1	**5**	**1**

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Raw Data for SOP #1 and SOP #2

Type of School	Mean						
Private	25.20408163						
Public	23.60606061						
Sex	**Frequency**	**Percent**			**Type of School**	**Frequency**	**Percent**
F	99	67%			Private	62	42%
M	49	33%			Public	86	58%
Total	148	100%			Total	148	100%
Indicator	**Mean Score**	**Description**		**Indicator**	**Mean Score**	**Description**	
Decimals	6.59	Proficient		Self-perception	2.99	Average	
Fraction	4.28	Approaching Proficiency		Beliefs	3.85	High	
Integers	4.71	Approaching Proficiency		Mindsets	3.38	Average	
Polynomials	4.01	Approaching Proficiency					
Algebraic Expression	4.55	Approaching Proficiency					
Indicator	**Standard Deviation**			**Indicator**	**Standard Deviation**		
Decimals	2.11			Self-perception	2.96		
Fraction	2.38			Beliefs	3.81		
Integers	2.24			Mindsets	3.34		
Polynomials	2.06						
Algebraic Expression	2.50						

Raw Data for SOP #3

Self-Perception											Beliefs											Mindsets									
S1	**S2**	**S3**	**S4**	**S5**	**S6**	**S7**	**S8**	**S9**	**S10**	**MEAN**	**S1**	**S2**	**S3**	**S4**	**S5**	**S6**	**S7**	**S8**	**S9**	**S10**	**MEAN**	**S1**	**S2**	**S3**	**S4**	**S5**	**S6**	**S7**	**S8**	**S9**	**S10**
3	2	2	1	2	2	3	3	3	4	**2.50**	3	5	4	5	4	3	5	4	4	3	**4.00**	2	3	2	2	3	2	3	4	2	3
3	3	3	2	3	3	5	5	1	5	**3.30**	4	5	5	5	4	4	5	5	4	3	**4.40**	3	4	5	4	3	3	3	4	3	5
2	3	2	2	2	2	3	2	4	3	**2.50**	3	3	4	3	4	2	2	3	3	2	**2.90**	2	2	2	3	2	3	2	2	2	2
2	2	3	2	3	2	2	3	1	5	**2.50**	3	2	2	2	3	3	3	3	2	2	**2.50**	2	2	2	2	2	2	2	2	2	2
4	3	4	4	4	4	4	4	5	1	**3.70**	4	1	4	4	4	4	4	4	2	4	**3.50**	4	4	4	4	5	4	4	3	4	1
1	3	1	1	1	1	1	1	2	5	**1.70**	1	4	5	5	5	2	5	5	5	1	**3.80**	1	1	2	4	3	4	2	2	1	2
1	1	1	1	1	1	1	1	3	5	**1.60**	4	4	4	4	2	1	3	4	3	1	**3.00**	2	1	1	3	1	3	2	2	3	3
3	5	4	3	3	3	3	3	3	5	**3.50**	5	4	5	3	5	5	5	4	5	5	**4.60**	4	3	3	4	3	5	4	5	4	5
1	3	3	3	2	3	3	3	2	2	**2.50**	4	5	3	3	4	4	3	4	3	4	**3.70**	4	4	4	3	3	4	3	3	4	4
4	4	4	4	4	4	5	4	5	5	**4.30**	5	4	4	4	5	5	4	4	5	4	**4.40**	3	3	3	4	3	5	4	4	5	5
3	3	4	4	4	3	3	3	4	4	**3.50**	4	3	3	4	4	3	4	4	3	4	**3.60**	4	4	3	4	3	4	4	4	3	4
2	2	4	3	2	2	2	3	2	5	**2.70**	1	5	5	5	5	3	2	5	5	3	**3.90**	4	3	3	3	5	5	3	2	3	5
3	4	3	3	2	4	5	3	3	5	**3.50**	5	5	5	4	5	5	5	5	5	3	**4.70**	4	4	4	5	4	4	4	5	5	5
2	3	3	3	3	2	1	3	3	4	**2.70**	4	4	4	4	4	3	4	4	4	3	**3.80**	3	4	4	4	3	5	3	3	4	4
2	3	3	2	2	2	4	3	2	4	**2.70**	3	4	4	3	3	2	3	3	3	2	**3.00**	3	4	4	3	3	5	2	2	2	4
4	4	4	4	4	5	3	4	3	4	**3.90**	5	4	3	4	4	5	4	4	3	5	**4.10**	4	4	4	5	4	4	3	5	4	5
2	3	4	4	4	3	4	4	4	5	**3.70**	5	5	5	5	5	5	5	5	3	4	**4.70**	5	4	4	5	5	5	4	5	4	4
1	5	2	1	2	1	2	1	3	5	**2.30**	5	4	5	5	5	5	5	5	4	4	**4.70**	3	4	3	4	3	5	4	4	3	5
3	4	2	3	3	3	3	4	4	5	**3.40**	4	4	4	4	5	4	5	4	5	4	**4.30**	4	4	4	3	3	4	4	4	4	4
4	4	4	3	4	3	2	1	4	4	**3.30**	5	3	4	3	3	3	4	3	3	3	**3.40**	3	3	3	4	2	5	3	3	4	5
4	4	4	4	4	3	4	4	3	4	**3.80**	5	5	5	4	5	4	5	4	5	4	**4.60**	5	4	5	4	5	4	5	4	5	5
3	4	3	3	4	3	4	3	5	5	**3.70**	5	4	5	3	5	5	5	5	5	5	**4.70**	3	3	3	3	3	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	**5.00**	5	4	5	4	5	4	5	4	5	4	**4.50**	5	5	5	3	4	5	4	5	4	5
2	5	2	1	2	2	5	2	3	5	**2.90**	5	4	4	5	5	2	3	4	4	3	**3.90**	3	2	3	3	2	4	2	3	2	5
3	4	3	2	3	3	2	3	3	4	**3.00**	4	4	4	5	5	4	5	4	5	5	**4.50**	4	4	4	3	4	5	3	3	3	4

3	2	2	2	4	3	3	3	3	5	**3.00**	4	4	4	4	5	4	5	5	3	3	**4.10**	3	5	5	5	4	5	3	3	3	5
3	2	3	2	3	2	3	4	4	5	**3.10**	4	4	4	4	4	4	5	5	5	3	**4.20**	3	4	4	4	4	5	2	2	4	5
3	2	2	3	5	4	5	5	1	5	**3.50**	3	5	5	5	5	5	5	5	5	5	**4.80**	3	5	2	4	1	5	2	4	5	5
2	2	3	3	3	2	2	3	3	4	**2.70**	3	3	4	5	5	5	5	5	5	4	**4.40**	3	3	3	4	3	3	3	4	4	4
2	3	1	2	1	3	2	1	3	5	**2.30**	4	3	4	4	4	3	2	3	3	2	**3.20**	2	3	3	2	3	4	3	2	3	1
4	4	3	3	3	4	3	2	4	4	**3.40**	4	4	5	5	5	4	5	4	5	3	**4.40**	3	3	4	3	3	4	3	4	3	4
3	2	4	2	3	2	3	4	4	4	**3.10**	4	3	5	4	4	3	3	2	4	3	**3.50**	4	4	5	3	2	4	3	4	4	5
3	5	3	3	4	2	2	3	1	4	**3.00**	5	5	4	5	5	4	4	5	4	3	**4.40**	4	5	5	5	4	5	3	4	2	5
3	3	3	4	3	3	3	3	3	3	**3.10**	3	5	4	3	3	3	3	4	4	3	**3.50**	4	4	3	3	3	3	3	3	3	4
5	4	4	4	4	4	2	3	5	3	**3.80**	5	5	5	5	5	3	5	4	5	4	**4.60**	5	5	5	4	3	5	4	4	4	5
3	3	2	2	2	2	3	2	2	5	**2.60**	5	5	5	5	5	4	4	5	5	2	**4.50**	3	3	3	3	3	3	3	4	2	5
3	2	3	3	5	3	4	4	2	5	**3.40**	2	4	4	4	4	5	5	4	5	4	**4.10**	3	3	3	4	3	4	3	4	4	5
3	2	2	3	1	2	1	2	4	5	**2.50**	5	5	5	5	4	3	5	5	5	3	**4.50**	3	4	3	3	2	5	3	3	4	3
2	2	2	2	2	2	2	2	2	2	**2.00**	3	5	5	5	3	3	5	5	5	2	**4.10**	2	2	2	2	2	2	2	2	2	2
1	1	1	1	1	1	1	1	4	4	**1.60**	3	3	3	3	3	3	2	3	3	3	**2.90**	3	2	3	3	2	3	3	3	4	4
3	3	3	2	2	2	3	3	3	5	**2.90**	4	3	4	4	4	4	4	4	4	4	**3.90**	2	2	3	2	3	4	3	3	4	4
1	2	1	1	1	2	1	3	1	5	**1.80**	3	5	2	3	5	1	5	3	4	1	**3.20**	2	5	3	1	1	3	4	2	5	2
1	1	5	1	1	1	1	1	1	5	**1.80**	1	5	4	5	4	4	5	5	5	1	**3.90**	3	4	4	5	4	3	2	2	2	5
3	3	3	2	3	3	5	5	1	5	**3.30**	4	5	5	5	4	4	5	5	4	3	**4.40**	3	4	5	4	3	3	3	4	3	5
1	2	2	1	1	3	2	1	1	5	**1.90**	2	2	3	2	4	2	2	2	2	1	**2.20**	1	2	1	1	1	3	1	1	1	2
3	3	3	4	4	4	3	4	4	5	**3.70**	4	4	4	4	5	5	5	5	5	5	**4.60**	4	4	3	4	3	4	4	4	3	4
3	5	3	5	5	5	3	3	5	3	**4.00**	5	4	5	5	5	4	5	5	4	3	**4.50**	4	4	4	4	4	5	3	5	4	5
4	5	3	4	5	1	4	1	5	5	**3.70**	5	3	5	4	4	5	5	5	5	5	**4.60**	4	5	3	3	4	5	3	5	5	3
3	3	4	2	3	4	1	1	3	5	**2.90**	3	5	4	4	3	2	5	3	4	2	**3.50**	3	3	4	2	4	3	2	4	2	3
2	2	1	2	1	1	3	1	3	4	**2.00**	3	3	5	5	4	4	5	5	5	3	**4.20**	2	2	1	5	2	5	2	3	3	5
4	3	4	4	4	4	4	4	5	1	**3.70**	4	1	4	4	4	4	4	4	2	4	**3.50**	4	4	4	4	5	4	4	3	4	1
1	1	1	1	1	1	1	1	3	5	**1.60**	4	4	4	4	2	1	3	4	3	1	**3.00**	2	1	1	3	1	3	2	2	3	3
2	2	4	3	2	2	2	3	2	5	**2.70**	1	5	5	5	5	3	2	5	5	3	**3.90**	4	3	3	3	5	5	3	2	3	5
3	4	3	3	2	4	5	3	3	5	**3.50**	5	5	5	4	5	5	5	5	5	3	**4.70**	4	4	4	5	4	4	4	5	5	5
2	3	3	3	3	2	1	3	3	4	**2.70**	4	4	4	4	4	3	4	4	4	3	**3.80**	3	4	4	4	3	5	3	3	4	4

1	5	2	1	2	1	2	1	3	5	**2.30**	5	4	5	5	5	5	5	5	4	4	**4.70**	3	4	3	4	3	5	4	4	3	5
3	4	3	2	3	3	2	3	3	4	**3.00**	4	4	4	5	5	4	5	4	5	5	**4.50**	4	4	4	3	4	5	3	3	3	4
3	2	2	2	4	3	3	3	3	5	**3.00**	4	4	4	4	5	4	5	5	3	3	**4.10**	3	5	5	5	4	5	3	3	3	5
3	2	3	2	3	2	3	4	4	5	**3.10**	4	4	4	4	4	4	5	5	5	3	**4.20**	3	4	4	4	4	5	2	2	4	5
3	2	2	3	5	4	5	5	1	5	**3.50**	3	5	5	5	5	5	5	5	5	5	**4.80**	3	5	2	4	1	5	2	4	5	5
3	3	3	4	3	3	3	3	3	3	**3.10**	3	5	4	3	3	3	3	4	4	3	**3.50**	4	4	3	3	3	3	3	3	3	4
3	2	3	3	5	3	4	4	2	5	**3.40**	2	4	4	4	4	5	5	4	5	4	**4.10**	3	3	3	4	3	4	3	4	4	5
3	4	3	2	2	2	3	2	2	5	**2.80**	3	5	5	5	5	3	5	5	4	3	**4.30**	3	4	4	3	3	3	3	3	3	4
3	2	2	2	3	2	3	3	4	4	**2.80**	4	3	2	2	3	4	4	2	3	3	**3.00**	3	3	2	4	3	4	3	4	3	5
3	3	4	2	2	3	3	3	2	5	**3.00**	4	4	4	3	4	4	4	4	4	3	**3.80**	3	4	3	4	3	5	3	4	3	4
2	3	2	3	3	3	5	4	3	5	**3.30**	4	5	5	5	5	4	5	4	4	3	**4.40**	3	3	2	4	3	5	5	5	4	4
1	2	3	1	3	1	1	5	1	5	**2.30**	3	3	5	4	5	5	5	4	4	3	**4.10**	3	4	4	4	4	5	4	5	5	5
4	3	3	3	4	2	3	2	3	3	**3.00**	3	4	2	3	4	4	4	3	3	3	**3.00**	4	3	2	4	3	4	3	3	4	4
2	3	1	2	4	2	1	2	1	5	**2.30**	4	4	4	4	5	5	5	2	4	2	**3.90**	3	3	4	4	4	5	5	4	2	4
4	4	3	3	2	3	3	3	3	4	**3.20**	4	4	5	5	5	3	4	4	4	2	**4.00**	3	4	4	5	3	4	3	4	4	4
3	2	3	4	2	3	2	3	3	2	**2.70**	1	2	2	3	4	4	4	3	3	4	**3.00**	4	3	3	4	3	5	4	3	3	2
2	3	2	2	2	2	3	3	2	4	**2.50**	4	3	3	3	3	2	4	4	4	3	**3.30**	3	4	2	3	2	4	3	5	3	5
3	4	3	3	3	2	3	3	2	5	**3.10**	4	5	4	4	4	4	4	3	4	3	**3.90**	3	3	3	2	2	4	3	3	3	4
2	3	1	2	2	2	3	4	2	5	**2.60**	4	3	5	5	5	3	4	3	2	2	**3.60**	3	3	2	5	3	4	3	5	5	4
3	2	2	3	3	2	2	2	2	3	**2.40**	2	3	3	3	4	3	3	4	4	2	**3.10**	2	3	2	3	1	2	2	5	5	5
2	2	3	2	2	1	3	2	1	3	**2.10**	3	3	3	4	4	3	3	2	4	2	**3.10**	2	3	2	3	2	3	2	3	3	4
3	3	4	3	4	4	3	3	2	5	**3.40**	5	5	5	5	5	5	5	3	4	3	**4.50**	3	4	3	4	4	5	4	5	4	4
4	3	4	3	4	3	3	2	2	5	**3.30**	5	5	5	4	5	5	5	5	5	4	**4.80**	4	4	4	5	4	5	4	4	4	5
1	5	1	1	3	3	2	1	1	5	**2.30**	2	2	5	3	5	2	5	3	3	2	**3.20**	1	3	4	5	4	5	4	5	3	5
3	3	3	2	3	3	2	3	3	5	**3.00**	4	3	3	3	4	3	3	4	3	3	**3.30**	3	3	3	3	3	4	3	4	3	4
3	3	3	4	2	2	3	3	3	4	**3.00**	3	4	4	4	5	4	4	3	3	3	**3.70**	3	2	2	4	3	4	4	4	4	5
3	3	3	4	2	2	3	4	2	5	**3.10**	4	4	4	3	3	4	4	3	3	2	**3.40**	3	2	2	4	2	4	3	2	2	4
3	4	4	5	4	3	5	4	4	5	**4.10**	5	5	5	5	5	4	5	5	4	3	**4.60**	3	4	3	3	3	5	3	5	4	5
3	3	3	4	3	3	4	3	2	4	**3.20**	4	5	5	5	4	4	5	5	5	4	**4.60**	2	5	3	5	3	5	3	4	4	5
2	3	2	2	3	2	4	4	4	5	**3.10**	5	5	5	5	4	5	5	5	3	4	**4.60**	4	4	3	5	5	5	3	4	3	5

4	5	3	3	4	5	4	4	5	4	**4.10**	5	5	5	5	5	5	5	4	5	4	**4.80**	4	5	5	5	4	5	4	4	5	4
4	3	3	2	2	1	4	4	4	5	**3.20**	3	5	5	4	4	3	3	3	4	4	**3.80**	3	2	2	2	1	4	3	3	3	3
2	3	3	2	2	2	2	3	2	5	**2.60**	4	3	4	4	4	4	3	3	3	2	**3.40**	3	3	4	5	3	5	4	5	5	5
3	3	3	1	2	2	2	3	4	5	**2.80**	3	4	3	5	4	4	5	4	3	4	**3.90**	3	4	3	3	3	4	4	3	3	2
3	2	2	1	1	2	1	1	2	5	**2.00**	3	5	4	4	3	2	1	2	4	2	**3.00**	1	1	1	1	1	4	1	3	2	4
3	3	1	3	4	3	3	4	4	5	**3.30**	4	5	5	5	4	3	5	5	5	4	**4.50**	3	5	5	3	3	4	3	4	3	5
3	5	3	3	3	3	3	3	5	5	**3.60**	5	5	4	4	4	3	4	4	5	4	**4.20**	5	5	4	5	4	5	4	4	5	5
3	4	5	3	5	4	4	4	5	5	**4.20**	5	4	4	4	4	3	3	4	5	4	**4.00**	4	4	4	3	3	5	4	5	4	5
3	3	2	3	4	3	4	4	5	4	**3.50**	4	5	4	4	4	4	4	3	3	3	**3.80**	3	2	2	3	3	3	2	4	4	4
3	4	4	4	4	4	4	3	3	4	**3.70**	5	5	5	5	5	5	5	5	5	5	**5.00**	4	4	4	4	3	4	4	4	3	5
3	3	3	3	4	3	4	4	5	5	**3.70**	3	5	4	3	5	3	3	4	4	2	**3.60**	3	3	5	5	4	4	3	4	3	5
4	4	4	4	4	4	4	4	4	4	**4.00**	3	5	4	4	5	4	5	5	5	4	**4.40**	3	4	4	4	3	4	3	4	3	5
4	3	2	1	4	4	4	3	4	4	**3.30**	3	4	5	4	5	3	3	4	3	2	**3.60**	3	3	2	4	3	5	3	3	4	3
4	4	4	3	4	3	4	3	3	3	**3.50**	3	3	3	3	3	3	3	3	3	3	**3.00**	4	3	4	3	4	3	4	3	4	3
3	2	2	4	3	2	2	3	3	5	**2.90**	2	2	3	3	3	2	5	3	3	3	**2.90**	2	3	4	4	3	5	3	4	3	4
3	4	4	2	2	2	3	3	2	2	**2.70**	5	5	5	5	5	5	5	5	2	5	**4.70**	4	4	4	4	2	5	2	5	3	5
2	3	2	2	2	2	3	3	3	5	**2.70**	5	4	5	5	5	3	4	4	5	2	**4.20**	3	3	2	4	2	5	3	3	3	4
4	4	4	4	4	5	3	4	3	4	**3.90**	5	4	3	4	4	5	4	4	3	5	**4.10**	4	4	4	5	4	4	3	5	4	5
4	4	3	3	4	4	4	3	1	5	**3.50**	5	5	5	5	5	4	5	4	5	3	**4.60**	3	4	3	2	4	4	3	3	2	5
5	5	5	5	5	5	5	5	5	5	**5.00**	5	4	5	4	5	4	5	4	5	4	**4.50**	5	5	5	3	4	5	4	5	4	5
5	4	4	4	4	4	2	3	5	3	**3.80**	5	5	5	5	5	3	5	4	5	4	**4.60**	5	5	5	4	3	5	4	4	4	5
2	2	2	2	3	2	1	1	2	2	**1.90**	2	3	3	3	3	2	3	2	2	1	**2.40**	1	2	2	1	2	4	3	3	2	2
3	4	2	2	1	3	3	3	3	4	**2.80**	4	5	5	5	4	4	4	5	4	3	**4.30**	4	4	4	3	2	4	3	5	4	4
3	4	2	3	3	4	3	4	1	5	**3.20**	3	3	3	4	3	3	3	3	3	2	**3.00**	4	3	3	3	2	4	5	3	5	4
3	3	3	3	3	3	3	3	4	3	**3.10**	3	3	4	4	3	4	3	3	4	3	**3.40**	3	3	2	2	3	3	3	4	4	4
4	4	3	3	2	2	2	2	1	3	**2.60**	3	3	1	2	4	3	1	1	1	2	**2.10**	3	3	2	4	1	2	1	4	5	1
3	3	2	3	5	3	2	3	2	4	**3.00**	3	4	3	3	2	5	5	4	4	3	**3.60**	3	4	2	3	3	3	2	3	2	3
3	3	3	3	2	3	3	3	3	5	**3.10**	4	3	3	3	3	3	3	3	3	3	**3.10**	3	3	3	3	3	3	3	3	3	4
3	2	2	2	2	2	3	2	2	3	**2.30**	4	3	3	4	3	2	3	3	3	3	**3.10**	2	2	2	3	3	3	2	2	3	2
2	3	3	2	3	2	3	2	1	4	**2.50**	3	4	4	4	4	4	4	4	4	4	**3.90**	3	3	2	2	2	3	2	3	3	3

5	5	5	5	5	5	4	5	5	2	**4.60**	5	4	5	5	5	4	5	5	4	5	**4.70**	5	5	5	5	5	5	5	5	5	5
4	5	5	4	4	3	3	5	5	5	**4.30**	5	5	5	5	5	5	5	5	5	5	**5.00**	5	5	5	5	5	5	5	5	5	5
4	4	4	3	4	3	2	3	5	5	**3.70**	5	4	4	4	4	3	4	3	4	4	**3.90**	4	4	4	3	3	5	4	4	5	5
3	3	2	4	3	4	5	4	5	5	**3.80**	4	5	3	3	5	5	4	3	5	4	**4.10**	3	3	3	4	4	3	4	5	5	4
3	3	3	2	2	2	3	3	5	5	**3.10**	5	5	4	4	4	5	5	5	5	5	**4.70**	4	4	5	4	1	5	3	3	5	5
1	3	1	2	1	1	3	1	1	3	**1.70**	1	5	5	5	4	3	5	3	2	1	**3.40**	1	1	1	1	1	2	1	1	2	3
4	5	4	3	4	4	4	5	2	3	**3.80**	4	5	5	4	5	4	4	4	4	4	**4.30**	4	5	4	5	3	5	3	4	4	4
3	5	5	4	4	4	4	4	5	5	**4.30**	5	5	5	5	5	5	5	5	5	5	**5.00**	5	5	5	5	5	5	5	5	5	5
4	4	5	3	4	4	4	4	5	5	**4.20**	5	5	5	5	5	5	5	5	5	5	**5.00**	4	4	4	4	5	5	4	4	4	5
4	4	3	4	4	4	4	4	4	3	**3.80**	5	5	5	5	5	5	5	5	5	5	**5.00**	4	4	3	4	3	5	4	4	4	5
4	4	4	4	4	4	4	4	4	4	**4.00**	5	2	3	3	3	4	5	4	4	4	**3.70**	5	5	5	5	5	5	5	5	5	4
1	1	1	1	1	1	1	1	1	5	**1.40**	1	2	4	2	2	1	3	3	3	1	**2.20**	1	1	1	1	1	3	1	1	1	1
3	2	3	1	2	2	3	2	3	2	**2.30**	3	4	3	3	4	2	3	3	4	1	**3.00**	3	4	3	2	1	3	3	3	3	3
3	3	3	3	3	2	2	2	3	4	**2.80**	3	4	3	3	4	3	4	3	2	2	**3.10**	2	3	3	4	2	4	3	3	3	2
3	3	3	3	3	3	4	4	5	5	**3.60**	5	4	5	5	5	3	4	5	5	4	**4.50**	5	4	3	4	3	5	3	5	4	5
3	2	2	2	2	1	2	3	3	3	**2.30**	3	3	4	3	4	2	3	2	3	2	**2.90**	3	3	2	2	2	3	3	3	2	4
2	2	2	1	2	2	2	2	1	2	**1.80**	2	4	3	2	3	3	5	5	5	5	**3.70**	2	2	2	2	1	2	2	2	2	3
3	3	3	2	3	1	2	3	4	4	**2.80**	4	4	4	4	4	3	3	3	3	4	**3.60**	3	3	2	3	3	3	2	3	3	2
3	3	2	3	3	2	3	3	4	4	**3.00**	4	3	3	3	3	4	4	4	3	3	**3.40**	3	2	2	2	2	3	2	3	3	3
4	2	3	3	2	2	2	3	5	4	**3.00**	4	4	3	3	4	3	4	3	4	4	**3.60**	4	4	3	4	3	4	3	3	4	5
3	4	3	3	4	4	3	4	4	2	**3.40**	5	4	4	5	4	4	4	5	5	4	**4.40**	4	4	4	3	4	3	4	3	4	4
2	2	3	3	5	3	1	3	2	3	**2.70**	4	3	5	4	5	3	3	2	2	1	**3.20**	1	1	1	2	1	5	2	1	1	4
2	5	3	2	3	3	5	3	1	5	**3.20**	3	4	5	4	5	4	5	4	4	3	**4.10**	2	3	2	4	3	3	3	4	2	3
2	2	2	2	3	2	3	1	3	5	**2.50**	3	3	4	3	4	3	3	3	4	2	**3.20**	2	3	3	4	3	3	3	2	2	3
1	2	1	2	3	2	2	3	1	5	**2.20**	1	4	4	3	3	2	3	4	1	1	**2.60**	1	2	1	2	3	4	2	1	3	1
3	3	3	2	2	2	1	1	1	5	**2.30**	4	3	3	3	3	2	3	3	2	1	**2.70**	2	2	2	3	2	3	3	2	3	3
3	3	3	2	4	3	2	2	2	5	**2.90**	3	3	3	3	3	2	3	3	4	3	**3.00**	1	3	3	2	1	2	3	3	2	2
3	2	3	3	2	2	3	3	4	3	**2.80**	3	4	4	3	3	3	4	3	4	3	**3.40**	3	3	2	3	3	3	3	3	2	3
3	2	2	1	2	2	2	1	2	3	**2.00**	3	5	4	3	4	4	3	5	4	3	**3.80**	2	2	3	1	3	2	2	3	2	4
1	1	3	1	1	1	2	1	1	5	**1.70**	3	4	5	2	4	2	5	4	4	2	**3.50**	1	2	3	4	4	5	3	5	2	4

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2	2	2	2	3	2	2	2	1	4	**2.20**	4	4	3	3	4	3	3	2	3	3	**3.20**	2	3	3	3	2	2	2	2	3	5
3	2	3	3	2	3	2	2	1	2	**2.30**	3	2	3	3	4	2	3	2	2	2	**2.60**	2	2	2	2	2	2	2	2	2	2
5	3	3	5	5	5	4	5	5	3	**4.30**	2	4	5	3	5	4	5	3	3	3	**3.70**	2	2	2	3	1	5	2	2	3	1
										3.01											**3.86**										

Indicator	Mean Score
Self-perception	3.01
Beliefs	3.86
Mindsets	3.4

Indicator	Standard Deviation
Self-perception	0.72
Beliefs	0.68
Mindsets	0.78

Description
Average
High
Average

Raw Data for SOP #4

Sex	TOTAL SCORE	Rpdnt No.		School	Rpdnt No.	TOTAL SCORE
F	31	**Rpdnt 1**		Private	**Rpdnt 1**	31
F	16	**Rpdnt 3**		Private	**Rpdnt 3**	16
F	38	**Rpdnt 6**		Private	**Rpdnt 6**	38
F	16	**Rpdnt 15**		Private	**Rpdnt 15**	16
F	27	**Rpdnt 19**		Private	**Rpdnt 19**	27
F	27	**Rpdnt 21**		Private	**Rpdnt 21**	27
F	27	**Rpdnt 22**		Private	**Rpdnt 22**	27
F	16	**Rpdnt 24**		Private	**Rpdnt 24**	16
F	33	**Rpdnt 29**		Private	**Rpdnt 29**	33
F	28	**Rpdnt 30**		Private	**Rpdnt 30**	28
F	25	**Rpdnt 31**		Private	**Rpdnt 31**	25
F	27	**Rpdnt 32**		Private	**Rpdnt 32**	27
F	27	**Rpdnt 44**		Private	**Rpdnt 44**	27
F	20	**Rpdnt 45**		Private	**Rpdnt 45**	20
F	31	**Rpdnt 70**		Private	**Rpdnt 70**	31

F	15	**Rpdnt 71**		Private	**Rpdnt 71**	15
F	14	**Rpdnt 72**		Private	**Rpdnt 72**	14
F	14	**Rpdnt 75**		Private	**Rpdnt 75**	14
F	24	**Rpdnt 77**		Private	**Rpdnt 77**	24
F	16	**Rpdnt 78**		Private	**Rpdnt 78**	16
F	15	**Rpdnt 79**		Private	**Rpdnt 79**	15
F	47	**Rpdnt 86**		Private	**Rpdnt 86**	47
F	21	**Rpdnt 91**		Private	**Rpdnt 91**	21
F	33	**Rpdnt 97**		Private	**Rpdnt 97**	33
F	37	**Rpdnt 98**		Private	**Rpdnt 98**	37
F	20	**Rpdnt 100**		Private	**Rpdnt 100**	20
F	31	**Rpdnt 101**		Private	**Rpdnt 101**	31
F	25	**Rpdnt 102**		Private	**Rpdnt 102**	25
F	40	**Rpdnt 104**		Private	**Rpdnt 104**	40
F	23	**Rpdnt 107**		Private	**Rpdnt 107**	23
F	25	**Rpdnt 108**		Private	**Rpdnt 108**	25
F	26	**Rpdnt 115**		Private	**Rpdnt 115**	26
F	45	**Rpdnt 116**		Private	**Rpdnt 116**	45
F	25	**Rpdnt 5**		Private	**Rpdnt 4**	19
F	39	**Rpdnt 7**		Private	**Rpdnt 11**	34
F	21	**Rpdnt 12**		Private	**Rpdnt 17**	27
F	14	**Rpdnt 13**		Private	**Rpdnt 33**	32
F	14	**Rpdnt 14**		Private	**Rpdnt 39**	16
F	22	**Rpdnt 18**		Private	**Rpdnt 40**	19
F	18	**Rpdnt 25**		Private	**Rpdnt 41**	28
F	18	**Rpdnt 26**		Private	**Rpdnt 46**	11
F	23	**Rpdnt 27**		Private	**Rpdnt 61**	13
F	20	**Rpdnt 28**		Private	**Rpdnt 62**	13
F	30	**Rpdnt 34**		Private	**Rpdnt 67**	24
F	17	**Rpdnt 37**		Private	**Rpdnt 81**	34

F	24	**Rpdnt 42**		Private	**Rpdnt 93**	41
F	16	**Rpdnt 47**		Private	**Rpdnt 103**	26
F	20	**Rpdnt 48**		Private	**Rpdnt 111**	19
F	24	**Rpdnt 49**		Private	**Rpdnt 112**	24
F	17	**Rpdnt 51**		Private	**Rpdnt 120**	23
F	9	**Rpdnt 52**		Private	**Rpdnt 121**	37
F	13	**Rpdnt 53**		Private	**Rpdnt 123**	29
F	18	**Rpdnt 54**		Private	**Rpdnt 124**	35
F	12	**Rpdnt 55**		Private	**Rpdnt 126**	11
F	25	**Rpdnt 56**		Private	**Rpdnt 136**	17
F	28	**Rpdnt 57**		Private	**Rpdnt 139**	18
F	21	**Rpdnt 59**		Private	**Rpdnt 140**	23
F	16	**Rpdnt 63**		Private	**Rpdnt 141**	19
F	18	**Rpdnt 65**		Private	**Rpdnt 144**	16
F	24	**Rpdnt 66**		Private	**Rpdnt 145**	14
F	22	**Rpdnt 69**		Private	**Rpdnt 146**	8
F	19	**Rpdnt 73**		Private	**Rpdnt 148**	9
F	19	**Rpdnt 74**		Public	**Rpdnt 5**	25
F	22	**Rpdnt 80**		Public	**Rpdnt 7**	39
F	38	**Rpdnt 82**		Public	**Rpdnt 12**	21
F	38	**Rpdnt 83**		Public	**Rpdnt 13**	14
F	21	**Rpdnt 84**		Public	**Rpdnt 14**	14
F	31	**Rpdnt 85**		Public	**Rpdnt 18**	22
F	22	**Rpdnt 87**		Public	**Rpdnt 25**	18
F	41	**Rpdnt 89**		Public	**Rpdnt 26**	18
F	21	**Rpdnt 92**		Public	**Rpdnt 27**	23
F	32	**Rpdnt 94**		Public	**Rpdnt 28**	20
F	29	**Rpdnt 96**		Public	**Rpdnt 34**	30
F	35	**Rpdnt 99**		Public	**Rpdnt 37**	17
F	36	**Rpdnt 105**		Public	**Rpdnt 42**	24

F	31	**Rpdnt 106**		Public	**Rpdnt 47**	16
F	37	**Rpdnt 109**		Public	**Rpdnt 48**	20
F	36	**Rpdnt 117**		Public	**Rpdnt 49**	24
F	28	**Rpdnt 118**		Public	**Rpdnt 51**	17
F	22	**Rpdnt 119**		Public	**Rpdnt 52**	9
F	15	**Rpdnt 50**		Public	**Rpdnt 53**	13
F	23	**Rpdnt 120**		Public	**Rpdnt 54**	18
F	38	**Rpdnt 122**		Public	**Rpdnt 55**	12
F	29	**Rpdnt 123**		Public	**Rpdnt 56**	25
F	35	**Rpdnt 124**		Public	**Rpdnt 57**	28
F	11	**Rpdnt 126**		Public	**Rpdnt 59**	21
F	20	**Rpdnt 127**		Public	**Rpdnt 63**	16
F	24	**Rpdnt 128**		Public	**Rpdnt 65**	18
F	27	**Rpdnt 129**		Public	**Rpdnt 66**	24
F	21	**Rpdnt 130**		Public	**Rpdnt 69**	22
F	8	**Rpdnt 131**		Public	**Rpdnt 73**	19
F	19	**Rpdnt 132**		Public	**Rpdnt 74**	19
F	15	**Rpdnt 133**		Public	**Rpdnt 80**	22
F	26	**Rpdnt 134**		Public	**Rpdnt 82**	38
F	30	**Rpdnt 135**		Public	**Rpdnt 83**	38
F	23	**Rpdnt 140**		Public	**Rpdnt 84**	21
F	16	**Rpdnt 144**		Public	**Rpdnt 85**	31
F	14	**Rpdnt 145**		Public	**Rpdnt 87**	22
F	20	**Rpdnt 147**		Public	**Rpdnt 89**	41
M	19	**Rpdnt 4**		Public	**Rpdnt 92**	21
M	34	**Rpdnt 11**		Public	**Rpdnt 94**	32
M	27	**Rpdnt 17**		Public	**Rpdnt 96**	29
M	32	**Rpdnt 33**		Public	**Rpdnt 99**	35
M	16	**Rpdnt 39**		Public	**Rpdnt 105**	36
M	19	**Rpdnt 40**		Public	**Rpdnt 106**	31

M	28	**Rpdnt 41**		Public	**Rpdnt 109**	37
M	11	**Rpdnt 46**		Public	**Rpdnt 117**	36
M	13	**Rpdnt 61**		Public	**Rpdnt 118**	28
M	13	**Rpdnt 62**		Public	**Rpdnt 119**	22
M	24	**Rpdnt 67**		Public	**Rpdnt 50**	15
M	34	**Rpdnt 81**		Public	**Rpdnt 2**	26
M	41	**Rpdnt 93**		Public	**Rpdnt 8**	29
M	26	**Rpdnt 103**		Public	**Rpdnt 9**	31
M	19	**Rpdnt 111**		Public	**Rpdnt 10**	33
M	24	**Rpdnt 112**		Public	**Rpdnt 16**	24
M	26	**Rpdnt 2**		Public	**Rpdnt 20**	38
M	29	**Rpdnt 8**		Public	**Rpdnt 23**	39
M	31	**Rpdnt 9**		Public	**Rpdnt 35**	50
M	33	**Rpdnt 10**		Public	**Rpdnt 36**	35
M	24	**Rpdnt 16**		Public	**Rpdnt 38**	16
M	38	**Rpdnt 20**		Public	**Rpdnt 43**	25
M	39	**Rpdnt 23**		Public	**Rpdnt 58**	18
M	50	**Rpdnt 35**		Public	**Rpdnt 60**	28
M	35	**Rpdnt 36**		Public	**Rpdnt 64**	20
M	16	**Rpdnt 38**		Public	**Rpdnt 68**	23
M	25	**Rpdnt 43**		Public	**Rpdnt 76**	18
M	18	**Rpdnt 58**		Public	**Rpdnt 88**	16
M	28	**Rpdnt 60**		Public	**Rpdnt 90**	7
M	20	**Rpdnt 64**		Public	**Rpdnt 95**	31
M	23	**Rpdnt 68**		Public	**Rpdnt 110**	29
M	18	**Rpdnt 76**		Public	**Rpdnt 113**	26
M	16	**Rpdnt 88**		Public	**Rpdnt 114**	22
M	7	**Rpdnt 90**		Public	**Rpdnt 122**	38
M	31	**Rpdnt 95**		Public	**Rpdnt 125**	25
M	29	**Rpdnt 110**		Public	**Rpdnt 127**	20

M	26	**Rpdnt 113**		Public	**Rpdnt 128**	24
M	22	**Rpdnt 114**		Public	**Rpdnt 129**	27
M	37	**Rpdnt 121**		Public	**Rpdnt 130**	21
M	25	**Rpdnt 125**		Public	**Rpdnt 131**	8
M	17	**Rpdnt 136**		Public	**Rpdnt 132**	19
M	19	**Rpdnt 137**		Public	**Rpdnt 133**	15
M	27	**Rpdnt 138**		Public	**Rpdnt 134**	26
M	18	**Rpdnt 139**		Public	**Rpdnt 135**	30
M	19	**Rpdnt 141**		Public	**Rpdnt 137**	19
M	13	**Rpdnt 142**		Public	**Rpdnt 138**	27
M	16	**Rpdnt 143**		Public	**Rpdnt 142**	13
M	8	**Rpdnt 146**		Public	**Rpdnt 143**	16
M	9	**Rpdnt 148**		Public	**Rpdnt 147**	20
		Mean Score			**Mean Score**	

Sex	Mean Score	Description
Female	24.24	Approaching Proficiency
Male	23.92	Approaching Proficiency

Sex	Standard Deviation
Female	8.31
Male	9.23

School	Mean	Description
Private	24.18	Approaching Proficiency
Public	24.10	Approaching Proficiency

School	Standard Deviation
Private	9.05
Public	8.31

Raw Data for SOP #5

Sex	Overall Mean	Rpdnt No.	School	Overall Mean	Rpdnt No.
F	3.03	Rpdnt 1	Private	3.03	Rpdnt 1
F	2.53	Rpdnt 3	Private	2.53	Rpdnt 3
F	2.57	Rpdnt 6	Private	2.57	Rpdnt 6
F	2.97	Rpdnt 15	Private	2.97	Rpdnt 15
F	3.83	Rpdnt 19	Private	3.83	Rpdnt 19
F	4.33	Rpdnt 21	Private	4.33	Rpdnt 21
F	3.97	Rpdnt 22	Private	3.97	Rpdnt 22
F	3.23	Rpdnt 24	Private	3.23	Rpdnt 24
F	3.50	Rpdnt 29	Private	3.50	Rpdnt 29
F	2.70	Rpdnt 30	Private	2.70	Rpdnt 30
F	3.73	Rpdnt 31	Private	3.73	Rpdnt 31
F	3.47	Rpdnt 32	Private	3.47	Rpdnt 32
F	3.80	Rpdnt 44	Private	3.80	Rpdnt 44
F	1.83	Rpdnt 45	Private	1.83	Rpdnt 45
F	3.67	Rpdnt 70	Private	3.67	Rpdnt 70
F	3.03	Rpdnt 71	Private	3.03	Rpdnt 71
F	3.07	Rpdnt 72	Private	3.07	Rpdnt 72
F	2.83	Rpdnt 75	Private	2.83	Rpdnt 75
F	3.97	Rpdnt 77	Private	3.97	Rpdnt 77
F	4.13	Rpdnt 78	Private	4.13	Rpdnt 78
F	3.13	Rpdnt 79	Private	3.13	Rpdnt 79
F	4.47	Rpdnt 86	Private	4.47	Rpdnt 86
F	3.87	Rpdnt 91	Private	3.87	Rpdnt 91
F	4.03	Rpdnt 97	Private	4.03	Rpdnt 97
F	3.40	Rpdnt 98	Private	3.40	Rpdnt 98
F	3.10	Rpdnt 100	Private	3.10	Rpdnt 100
F	3.73	Rpdnt 101	Private	3.73	Rpdnt 101
F	3.37	Rpdnt 102	Private	3.37	Rpdnt 102
F	3.80	Rpdnt 104	Private	3.80	Rpdnt 104

F	2.17	Rpdnt 107	Private	2.17	Rpdnt 107
F	3.60	Rpdnt 108	Private	3.60	Rpdnt 108
F	3.00	Rpdnt 115	Private	3.00	Rpdnt 115
F	4.77	Rpdnt 116	Private	4.77	Rpdnt 116
F	3.63	Rpdnt 5	Private	2.33	Rpdnt 4
F	2.23	Rpdnt 7	Private	3.60	Rpdnt 11
F	3.40	Rpdnt 12	Private	4.30	Rpdnt 17
F	4.20	Rpdnt 13	Private	3.87	Rpdnt 33
F	3.40	Rpdnt 14	Private	2.70	Rpdnt 39
F	3.60	Rpdnt 18	Private	2.50	Rpdnt 40
F	3.73	Rpdnt 25	Private	3.27	Rpdnt 41
F	3.73	Rpdnt 26	Private	2.60	Rpdnt 46
F	3.67	Rpdnt 27	Private	3.03	Rpdnt 61
F	3.97	Rpdnt 28	Private	3.30	Rpdnt 62
F	3.30	Rpdnt 34	Private	3.03	Rpdnt 67
F	3.70	Rpdnt 37	Private	4.00	Rpdnt 81
F	3.47	Rpdnt 42	Private	4.23	Rpdnt 93
F	3.07	Rpdnt 47	Private	4.10	Rpdnt 103
F	3.47	Rpdnt 48	Private	3.13	Rpdnt 111
F	3.83	Rpdnt 49	Private	3.07	Rpdnt 112
F	3.57	Rpdnt 51	Private	3.43	Rpdnt 148
F	3.13	Rpdnt 52	Private	4.07	Rpdnt 121
F	3.33	Rpdnt 53	Private	4.50	Rpdnt 123
F	3.23	Rpdnt 54	Private	4.27	Rpdnt 124
F	2.77	Rpdnt 55	Private	1.60	Rpdnt 126
F	2.77	Rpdnt 56	Private	2.60	Rpdnt 136
F	3.33	Rpdnt 57	Private	2.27	Rpdnt 139
F	3.30	Rpdnt 59	Private	2.50	Rpdnt 140
F	1.83	Rpdnt 63	Private	2.70	Rpdnt 141
F	2.63	Rpdnt 65	Private	2.83	Rpdnt 144

F	3.17	Rpdnt 66	Private	2.60	Rpdnt 145
F	3.07	Rpdnt 69	Private	2.70	Rpdnt 146
F	3.03	Rpdnt 73	Private	2.17	Rpdnt 120
F	3.20	Rpdnt 74	Public	3.63	Rpdnt 5
F	3.40	Rpdnt 80	Public	2.23	Rpdnt 7
F	3.10	Rpdnt 82	Public	3.40	Rpdnt 12
F	4.17	Rpdnt 83	Public	4.20	Rpdnt 13
F	3.90	Rpdnt 84	Public	3.40	Rpdnt 14
F	3.93	Rpdnt 85	Public	3.60	Rpdnt 18
F	3.30	Rpdnt 87	Public	3.73	Rpdnt 25
F	3.20	Rpdnt 89	Public	3.73	Rpdnt 26
F	3.40	Rpdnt 92	Public	3.67	Rpdnt 27
F	3.30	Rpdnt 94	Public	3.97	Rpdnt 28
F	2.30	Rpdnt 96	Public	3.30	Rpdnt 34
F	3.70	Rpdnt 99	Public	3.70	Rpdnt 37
F	4.13	Rpdnt 105	Public	3.47	Rpdnt 42
F	4.10	Rpdnt 106	Public	3.07	Rpdnt 47
F	3.43	Rpdnt 109	Public	3.47	Rpdnt 48
F	4.20	Rpdnt 117	Public	3.83	Rpdnt 49
F	3.73	Rpdnt 118	Public	3.57	Rpdnt 51
F	3.80	Rpdnt 119	Public	3.13	Rpdnt 52
F	4.77	Rpdnt 122	Public	3.33	Rpdnt 53
F	4.50	Rpdnt 123	Public	3.23	Rpdnt 54
F	4.27	Rpdnt 124	Public	2.77	Rpdnt 55
F	1.60	Rpdnt 126	Public	2.77	Rpdnt 56
F	2.70	Rpdnt 127	Public	3.33	Rpdnt 57
F	2.93	Rpdnt 128	Public	3.30	Rpdnt 59
F	4.07	Rpdnt 129	Public	1.83	Rpdnt 63
F	2.63	Rpdnt 130	Public	2.63	Rpdnt 65
F	2.50	Rpdnt 131	Public	3.17	Rpdnt 66

F	3.03	Rpdnt 132	Public	3.07	Rpdnt 69
F	2.97	Rpdnt 133	Public	3.03	Rpdnt 73
F	3.43	Rpdnt 134	Public	3.20	Rpdnt 74
F	3.83	Rpdnt 135	Public	3.40	Rpdnt 80
F	3.40	Rpdnt 137	Public	3.10	Rpdnt 82
F	2.50	Rpdnt 140	Public	4.17	Rpdnt 83
F	2.83	Rpdnt 144	Public	3.90	Rpdnt 84
F	2.60	Rpdnt 145	Public	3.93	Rpdnt 85
F	2.30	Rpdnt 147	Public	3.30	Rpdnt 87
F	2.17	Rpdnt 120	Public	3.20	Rpdnt 89
F	4.13	Rpdnt 50	Public	3.40	Rpdnt 92
M	2.33	Rpdnt 4	Public	3.30	Rpdnt 94
M	3.60	Rpdnt 11	Public	2.30	Rpdnt 96
M	4.30	Rpdnt 17	Public	3.70	Rpdnt 99
M	3.87	Rpdnt 33	Public	4.13	Rpdnt 105
M	2.70	Rpdnt 39	Public	4.10	Rpdnt 106
M	2.50	Rpdnt 40	Public	3.43	Rpdnt 109
M	3.27	Rpdnt 41	Public	4.20	Rpdnt 117
M	2.60	Rpdnt 46	Public	3.73	Rpdnt 118
M	3.03	Rpdnt 61	Public	3.80	Rpdnt 119
M	3.30	Rpdnt 62	Public	4.13	Rpdnt 50
M	3.03	Rpdnt 67	Public	3.33	Rpdnt 2
M	4.00	Rpdnt 81	Public	4.03	Rpdnt 8
M	4.23	Rpdnt 93	Public	3.27	Rpdnt 9
M	4.10	Rpdnt 103	Public	4.20	Rpdnt 10
M	3.13	Rpdnt 111	Public	4.07	Rpdnt 16
M	3.07	Rpdnt 112	Public	3.40	Rpdnt 20
M	3.33	Rpdnt 2	Public	4.67	Rpdnt 23
M	4.03	Rpdnt 8	Public	4.27	Rpdnt 35
M	3.27	Rpdnt 9	Public	3.43	Rpdnt 36

M	4.20	Rpdnt 10	Public	3.43	Rpdnt 38
M	4.07	Rpdnt 16	Public	3.27	Rpdnt 43
M	3.40	Rpdnt 20	Public	3.20	Rpdnt 58
M	4.67	Rpdnt 23	Public	2.43	Rpdnt 60
M	4.27	Rpdnt 35	Public	3.13	Rpdnt 64
M	3.43	Rpdnt 36	Public	3.10	Rpdnt 68
M	3.43	Rpdnt 38	Public	2.60	Rpdnt 76
M	3.27	Rpdnt 43	Public	3.43	Rpdnt 88
M	3.20	Rpdnt 58	Public	3.57	Rpdnt 90
M	2.43	Rpdnt 60	Public	4.77	Rpdnt 95
M	3.13	Rpdnt 64	Public	3.90	Rpdnt 110
M	3.10	Rpdnt 68	Public	3.90	Rpdnt 113
M	2.60	Rpdnt 76	Public	3.90	Rpdnt 114
M	3.43	Rpdnt 88	Public	4.77	Rpdnt 122
M	3.57	Rpdnt 90	Public	4.20	Rpdnt 125
M	4.77	Rpdnt 95	Public	2.70	Rpdnt 127
M	3.90	Rpdnt 110	Public	2.93	Rpdnt 128
M	3.90	Rpdnt 113	Public	4.07	Rpdnt 129
M	3.90	Rpdnt 114	Public	2.63	Rpdnt 130
M	3.43	Rpdnt 148	Public	2.50	Rpdnt 131
M	4.07	Rpdnt 121	Public	3.03	Rpdnt 132
M	4.20	Rpdnt 125	Public	2.97	Rpdnt 133
M	2.60	Rpdnt 136	Public	3.43	Rpdnt 134
M	2.83	Rpdnt 138	Public	3.83	Rpdnt 135
M	2.27	Rpdnt 139	Public	3.40	Rpdnt 137
M	2.70	Rpdnt 141	Public	2.83	Rpdnt 138
M	3.00	Rpdnt 142	Public	3.00	Rpdnt 142
M	2.73	Rpdnt 143	Public	2.73	Rpdnt 143
M	2.70	Rpdnt 146	Public	2.30	Rpdnt 147

School	**Mean**	**Description**

Private	3.29	Average
Public	3.43	High
School	**SD**	
Private	0.71	
Public	0.58	

Sex	**Mean**	**Description**
Female	3.36	Average
Male	3.39	Average
Sex	**SD**	
Female	0.64	
Male	0.64	

Raw Data for SOP #6

Level of Basic Mathematical Skills	**Level of Attitude**
31	3.033333333
16	2.533333333
38	2.566666667
16	2.966666667
27	3.833333333
27	4.333333333
27	3.966666667
16	3.233333333
33	3.5
28	2.7
25	3.733333333

27	3.466666667
27	3.8
20	1.833333333
31	3.666666667
15	3.033333333
14	3.066666667
14	2.833333333
24	3.966666667
16	4.133333333
15	3.133333333
47	4.466666667
21	3.866666667
33	4.033333333
37	3.4
20	3.1
31	3.733333333
25	3.366666667
40	3.8
23	2.166666667
25	3.6
26	3
45	4.766666667
19	2.333333333
34	3.6
27	4.3
32	3.866666667
16	2.7
19	2.5
28	3.266666667
11	2.6
13	3.033333333

13	3.3
24	3.033333333
34	4
41	4.233333333
26	4.1
19	3.133333333
24	3.066666667
25	3.633333333
39	2.233333333
21	3.4
14	4.2
14	3.4
22	3.6
18	3.733333333
18	3.733333333
23	3.666666667
20	3.966666667
30	3.3
17	3.7
24	3.466666667
16	3.066666667
20	3.466666667
24	3.833333333
17	3.566666667
9	3.133333333
13	3.333333333
18	3.233333333
12	2.766666667
25	2.766666667
28	3.333333333
21	3.3

16	1.833333333
18	2.633333333
24	3.166666667
22	3.066666667
19	3.033333333
19	3.2
22	3.4
38	3.1
38	4.166666667
21	3.9
31	3.933333333
22	3.3
41	3.2
21	3.4
32	3.3
29	2.3
35	3.7
36	4.133333333
31	4.1
37	3.433333333
36	4.2
28	3.733333333
22	3.8
15	4.133333333
26	3.333333333
29	4.033333333
31	3.266666667
33	4.2
24	4.066666667
38	3.4
39	4.666666667

50	4.266666667
35	3.433333333
16	3.433333333
25	3.266666667
18	3.2
28	2.433333333
20	3.133333333
23	3.1
18	2.6
16	3.433333333
7	3.566666667
31	4.766666667
29	3.9
26	3.9
22	3.9
23	3.433333333
37	4.066666667
38	4.766666667
29	4.5
35	4.266666667
25	4.2
11	1.6
20	2.7
24	2.933333333
27	4.066666667
21	2.633333333
8	2.5
19	3.033333333
15	2.966666667
26	3.433333333
30	3.833333333

17	2.6
19	3.4
27	2.833333333
18	2.266666667
23	2.5
19	2.7
13	3
16	2.733333333
16	2.833333333
14	2.6
8	2.7
20	2.3
9	2.166666667
Level of Basic Mathematical Skills	**Level of Attitude**
24.13513514	3.368693694

	Level of Basic Mathematical Skills	*Level of Attitude*
Level of Basic Mathematical Skills	1	
Level of Attitude	0.497717766	1

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.497717766
R Square	0.247722975
Adjusted R Square	0.242570392
Standard Error	7.483645474
Observations	148

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	2692.574658	2692.574658	48.07744097	1.22777E-10
Residual	146	8176.72264	56.00494959		
Total	147	10869.2973			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.*
Intercept	1.578880568	3.310742805	0.476896171	0.634149089	-4.964291589	8.122052725	-4.964291
X Variable 1	6.695846111	0.965683458	6.933789798	1.22777E-10	4.787321804	8.604370417	4.787321

Level of Basic Mathematical Skills

24.13513514

Level of Attitude

3.368693694

Appendix 12: Editor's Certificate

Holy Cross College of Calinan, Inc.
Davao- Bukidnon Highway, Calinan Poblacion, Davao City
RESEARCH AND PUBLICATION OFFICE

CERTIFICATION

This is to certify that the research paper of **Rincy V. Baguio, Mynell Jake N. Butaya, Kyan Aldrin M. Urquiza, James Errol R. Canonigo**, **Fran Timothy F. Acquas**, entitled **THE CORRELATION BETWEEN BASIC MATHEMATICS SKILLS AND ATTITUDE TOWARDS MATHEMATICS**, **has** undergone the editing process and been approved by the undersigned.

This certification is issued upon the request by the researcher on July 2025.

MARILYN C. BRAGANZA, MA
Editor

CURRICULUM VITAE

PERSONAL INFORMATION

Name: Rincy V. Baguio

Age: 18 years old

Date of Birth: March 30, 2005

Place of Birth: Davao City

Address: Purok Rambutan, Brgy. Talandang Tugbok District Davao City

Sex: Male

Civil Status: Single

Citizenship: Filipino

Religion: Roman Catholic

Father's Name: Ricky L. Baguio Occupation: Farmer

Mother's Name: Arlene V Baguio Occupation: Housewife

EDUCATIONAL BACKGROUND

	School	Year Graduated
Intermediate:	Porferio L. Antipala Elementary School	2018
Junior High School:	Porferio L. Antipala National High School	2021
Senior High School:	Holy Cross College of Calinan, Inc.	2024

Track: Academic Track

CURRICULUM VITAE

PERSONAL INFORMATION

Name: Mynell Jake N. Butaya

Age: 17 years old

Date of Birth: June 9, 2006

Place of Birth: Davao City

Address: Purok 6, Sirib, Calinan, Davao City

Sex: Male

Civil Status: Single

Citizenship: Filipino

Religion: Catholic

Father's Name: N/A Occupation: N/A

Mother's Name: Eileen N. Butaya Occupation: OFW

EDUCATIONAL BACKGROUND

	School	Year Graduated
Intermediate:	Sirib Elementary School	2018
Junior High School:	Holy Cross College of Calinan	2021
Senior High School:	Holy Cross College of Calinan	2024

Track: Academic Track

CURRICULUM VITAE

PERSONAL INFORMATION

Name: Kyan Aldrin M. Urquiza

Age: 19 years old

Date of Birth: January 29, 2005

Place of Birth: Robillo Calinan

Address: Talomo River, Calinan, Davao City

Sex: Male

Civil Status: Single

Citizenship: Filipino

Religion: Catholic

Father's Name: Arthur Joseph C. Urquiza Occupation: Fireman

Mother's Name: Marrieta M. Urquiza Occupation: Business Woman

EDUCATIONAL BACKGROUND

	School	Year Graduated
Intermediate:	Holy Spirit Academy of Calinan Inc.	2018
Junior High School:	Holy Spirit Academy of Calinan, Inc.	2021
Senior High School:	Holy Cross College of Calinan, Inc.	2024

Track: Academic Track

CURRICULUM VITAE

PERSONAL INFORMATION

Name: James Errol R. Canonigo

Age: 18 years old

Date of Birth: July 31, 2005

Place of Birth: Davao City

Address: Cadalian Baguio District Davao City

Sex: Male

Civil Status: Single

Citizenship: Filipino

Religion: Catholic

Father's Name: Dobern O. Canonigo Occupation: Driver

Mother's Name: Betchaida R. Canonigo Occupation: Housewife

EDUCATIONAL BACKGROUND

	School	Year Graduated
Intermediate:	Cadalian Elementary School	2018
Junior High School:	Holy Cross College of Calinan	2021
Senior High School:	Holy Cross College of Calinan	2024

Track: Academic Track

CURRICULUM VITAE

PERSONAL INFORMATION

Name: Fran Timothy F. Acquas

Age: 18 years old

Date of Birth: February 03, 2006

Place of Birth: Davao City

Address: Purok Durian, Wines, Baguio District, Davao City

Sex: Male

Civil Status: Single

Citizenship: Filipino

Religion: Alliance

Father's Name: Efren D. Acquas Occupation: Pastor/ Farmer

Mother's Name: Ana F. Acquas Occupation: Teacher

EDUCATIONAL BACKGROUND

	School	Year Graduated
Intermediate:	Baguio Central Elementary School	2018
Junior High School:	Baguio National School of Arts and Trades	2021
Senior High School:	Holy Cross College of Calinan, Inc.	2024

Track: Academic Track