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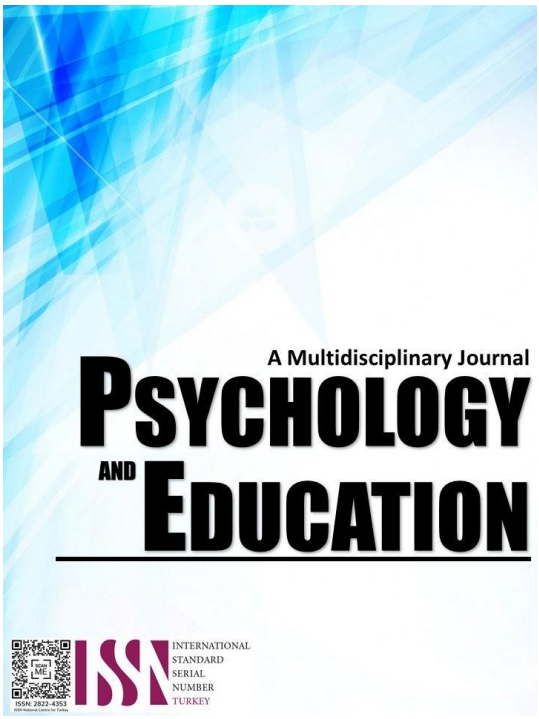

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Research Article

The In and Out Motivation of Pre-Service Math Teachers in the Current Shift of Learning Modality

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Abstract

Motivation allows students to get interested in learning, serving as a "bridge" to academic achievement. However, mathematics is deemed as a complex one and involves a lot of thinking to understand its concepts which leads students to get discouraged which transforms motivation into a "broken bridge" due to several aspects. The study traverses and elucidates the lived experiences of students in terms of their motivation in learning mathematics lessons. The study, with a qualitative approach, uses Heideggerian Phenomenology and Interpretative Phenomenological Analysis (IPA) anchored on the modified Van Kaam Approach popularized by Moustakas. The selection of the participants was done with a purposive strategy aligning with the inclusion criteria set in this study. The process of gathering the data was done through conducting interviews with ten student participants from BSEd-Math 1 in Cebu Technological University – Moalboal Campus. The themes of the study are Theme 1: The Broken Drive, Theme 2: The Rebuilding, and Theme 3: The Hope collectively represent the lived experiences of the students in terms of their motivational aspect in learning the mathematics subject. Results of this study show that there are varieties of reasons why students have low motivation in learning mathematics, and at the same time have a different way of coping with such difficulties encountered. It is recommended that parents should encourage their children to cope with their learning difficulties, and teachers should encourage students academically in a way of employing the interest of their students in discussing the mathematics lessons.

Keywords: *motivation, pre-service math teachers, lived experiences, phenomenology, mathematics*

Introduction

In the field of education, mathematics serves as the basis for its overarching goal (Brkslich, 2020), and motivation is essential for enabling students to engage in meaningful mathematics learning experiences (Cabello et al., 2023). Due to a lack of parental supervision and motivation, many students still struggle to meet the mathematics standards (Poudel, 2020), and they have trouble understanding math topics on their own. As a result, students may often feel frustrated and lose interest in learning mathematics (Yeh et al., 2019). Motivation is particularly important to look into because it may act as a filter through which students pursue and continue to study the subject (Blotnicky et al., 2018). The reasons, goals, intentions, aims, feelings, intuitions, values, beliefs, and attitudes that individuals use to explain why they do what they do are referred to as motivation (Mercier & Sperber, 2017). It is also important to differentiate between students' intrinsic and extrinsic motivation for mathematics, as well as the intensity of these objective motivations, which can change over time depending on the situation, a student's maturity level, culture, and unique background demographic characteristics (Segarino et al., 2022). The change from conventional face-to-face education in schools will have an impact on the manner and reasons that students must learn mathematics. Motivation is significant because it enables individuals to select from a wide range of options (Michaelides et al., 2019).

Children are motivated to succeed and expect success when teachers are kind, supportive, and emphasize the teaching-learning process over performance outcomes and when they receive feedback (Adamma et al., 2018, cited from Daniels et al., 2001). An emphasis on implementing activities to improve their relationship with mathematics and consider the intrinsic and extrinsic motivation of the students, their perceptions, and the anxiety that they have with mathematics. Educators must meet the essential psychological requirements of the students to promote autonomy, relatedness, and competence (Samuelsson, 2021). Learning strategies and motivation are essential to students' academic performance (Wu et al., 2021). There is substantial evidence that the Motivation for Mathematics Abbreviated Instrument's internal consistency and content validity for measuring the four motivational variables intrinsic motivation, mastery orientation, performance orientation, and expectancy are both high (Butler et al., 2021). Achievement in mathematics has been demonstrated to be adversely correlated with motivation but positively correlated with intrinsic motivation, identified regulation, and induced regulation (Tran & Nguyen, 2021).

As College students engage in mathematics with less motivation in the first place, it is difficult to learn the lesson (Olleras et al., 2022). After a series of lockdowns and restrictions on social gatherings, many schools are implementing face-to-face classes (Villar et al., 2022), and that includes how students will adjust to the new learning mode from online classes and how the shift will affect their prior motivational level from the recent learning mode when learning the topics (Gomez et al., 2024). According to Francis et al. (2019), there is a significant distinction in the level of incoming motivation of the students from both learning modes. Stark (2019) highlights that there should be an emphasis on how students engage with a subject matter in terms of their approach, learning experiences, characteristics, and activities involved to embed a foundation for their learning success. As students adjust to the current learning mode, concerns regarding their current level of motivation shall be addressed by improving this aspect because this will play a significant role in their learning, especially in the current learning mode that students need to adjust (Ando et al., 2022).

Mathematics interest to students has been subordinate due to inadequacy of motivation towards them. According to Arhin and Yanney (2020), despite its importance in human life, several studies have shown that there isn't much interest among children in studying math because they don't understand it well enough. Students are having a hard time exploring new concepts wherein their confidence in their ability to do mathematics is compromised. Arhin and Yanney (as cited in Anthony & Walshow, 2009), determined that in the modern-day times, many students are having difficulties with mathematics and carry out abysmally low of their final examinations in maximum jurisdictions. With the current shift of the new normal class, students have doubted their capabilities in dealing with this complex subject. It is far extensively claimed that bad perceptions and myths about mathematics are huge among students, most particularly among developing nations (Cabello et al., 2023). Furthermore, many students are terrified of arithmetic and feel helpless in the presence of mathematical concepts. (Bacong et al., 2023). This study aims to help college students who are less motivated and are discouraged from taking mathematics subjects. Somehow, as the eagerness grows, it will boost their confidence to try various strategies in doing mathematics by the use of motivation. Through this, less motivated students will find light and courage to understand the importance of mathematics.

In general, the goal of this study is to explain how college students engage with the subject of mathematics in terms of their motivation and their lived experiences. The study aims to discover more about the difficulties faced by math students, the various reasons why they fail to become more motivated to learn, the different coping mechanisms used by math students to motivate themselves to have an interest in math, and the meaning of their experiences.

Literature Review

Learning mathematics requires a significant understanding of the content wherein motivation plays a major role in bridging the student's interest to the subject matter. But, with students not being motivated to learn the different concepts in mathematics, it will be a hindrance to how they will acquire knowledge of the said subject. That is why, to strengthen that significant bridge that can help students to get interested in learning, there should be considerations of possible factors behind the cause. At the same time, teachers should be encouraged to modify a teaching approach that can rebuild the broken bridge of motivation that students have, due to possible factors, to let students be engaged in the different concepts of mathematics. The following literature and studies stated in this part of the study assert and emphasize the role of motivation and other factors that are associated with the gap being raised.

As stated by Adamma et al. (2018), one of the biggest problems of this century is motivating children to do well in school. The topic of facilitating student learning in schools remains on the minds of today's educators. As a result, the teacher's sole objective in the classroom is to pique students' interest in what they are studying and encourage them to learn. Due to their love of learning and enjoyment of the learning process, students who are intrinsically driven are more likely to participate in academic activities. Due to the way rewards reinforce desired actions, extrinsic motivation propels effort and success. In contrast to intrinsic motivation, extrinsic motivation produces more rapid results and requires less effort, but it also has the disadvantage that it often does not produce long-term results.

Cooperative Learning includes students working together developing and molding the self-efficacy of every individual to have more interpersonal experiences, solidifying motivation in learning mathematics, and enabling students to have a positive environment in facing the challenges of mathematics activities. Motivation integrating cooperative learning could be team games tournaments which enable the student to be more interested in learning mathematics as stated in their study. This results in encouraging teaching and learning interaction and catching up with student interest, improving the learning quality and learning outcomes of mathematics. As cited by In'am et al. (2021), the cooperative learning model can help to increase students' self-efficacy and motivation to learn mathematics as it contributes to and influences the student's capabilities in the field of mathematics, underpinning the self-efficacy and motivation of students. Giving more opportunities can stimulate the students' abilities in self-efficacy involving students actively in the learning process.

The study of Bot (2020) focused on (a) how teachers attempted to incorporate student motivation into their lessons and (b) teachers' belief systems in comparison to those of their students. Students and teachers were asked to differentiate what they thought makes mathematics motivating in a repertory grid activity which generated findings demonstrating that the conceptual systems of the persons studied, whether teachers or students, were identical. Both students and teachers emphasized the interdependence of arousal and control levels in shaping intrinsic motivation for mathematics exercises. Despite these correlations, the amount to which teachers can predict their students' motivation may be determined by teachers' concepts of intrinsic drive rather than their opinions about their pupils. The majority of the teachers surveyed had little understanding of their pupils' motivational ideas. The findings discussed to the necessity to educate teachers about the dynamics of student motivation and to pay special attention to individual variances in students' motivating ideas. In general, the findings show that when teachers can forecast their students' beliefs, they are better equipped to fine-tune their instruction to engage pupils in mathematics.

The Intrinsic motivation of students can be positively influenced by teachers' teaching methods, placement in mathematics courses of appropriate difficulty, and programming in which participate in high-quality ideals approximately mathematics. According to Wageman et al. (2017), the degree to which students perceive an activity to be hard, intriguing, mastering, and so on is known as intrinsic goal orientation. Extrinsic goal orientation students, who complement Intrinsic goal orientation, perceive activities as a means

to an end and do them for reasons such as grades, rewards, acknowledgment from others, or competitiveness. Unlike extrinsic motivation, which had little impact, their study discovered a strong positive relationship between student intrinsic motivation and achievement. In addition, the Extrinsic factors outrank Intrinsic factors in the open-ended responses and when it comes to their level of motivation. It implies that teachers can support students, create a conducive classroom environment, and provide opportunities for students to learn and achieve. Additionally, school administrators should be aware that there may be a need for professional development of teachers regarding student motivation.

Students are less motivated to learn because of the difficulties they face with mathematics. This is an external factor that has an impact on their behavior and learning goals. Learning motivation is defined by both internal and external factors (Gabriel et al., 2022). These factors motivate students to improve their overall behavior and could be triggered by the desire to succeed, encouragement, and the presence of a favorable environment. The desire to learn is an essential element in the learning process because it will assist the students in achieving their goals and learning objectives (Tabuena & Pentang, 2021). Learning motivation is a non-intellectual process that aids in the development of an individual's eagerness to learn. It can be influenced by the desire to learn and the mind to learn.

According to Carreon (2022), the opinions of respondents on in-person and online math classes varied significantly. When compared to online math lessons, the students who took part in their study gave face-to-face math sessions much higher ratings (Emia et al., 2022). Students favor in-person math lessons over online math classes as a consequence. They also favored face-to-face math learning over learning math online in terms of communication, education, conceptual grasp, and boosting math learning capacity, teamwork, and assessment. As a result, there is cause for worry regarding the impact of low motivation levels in online classrooms. Furthermore, when it comes to mathematical success among students, intrinsic motivation in synchronous and asynchronous modalities has a prominent effect.

When it comes to mathematics achievement among students, motivation, and anxiety are considered to fulfill this aspect when learning mathematics. As stated by Süren & Kandemir (2020), the anxiety that middle school eighth-grade students have towards mathematics and their level of motivation at the same time is high. This further solidifies that these two play a role in fulfilling the mathematics achievements based on their significant connection such that these two have a positive and moderate relationship stated from their results. However, anxiety places a higher stance on contributing to mathematics achievement than motivation. This asserts that anxiety can influence how a student can learn the concepts of mathematics. Thus, this calls for concern that the presence of anxiety among the students can disrupt or discourage their interest in learning.

The study of Arthur et al. (2021) suggested that the connection between mathematics learning motivation and performance is somewhat mediated by student interest in learning mathematics. It was discovered that affective motivational factors helped to distinguish between high and low mathematical ability. As factors influencing mathematical performance, self-efficacy, motivation, and emotional support were also noted. A detailed analysis of these earlier studies reveals that intrinsic and extrinsic motivations are the two key factors for mathematics learning. The focus of intrinsic mathematics learning motivation is on activities that lead to self-satisfaction rather than rewards from other sources. Extrinsic motivation, also known as instrumental motivation, emphasizes the outside motivations for acting. These are outward rewards for a job well done. By way of Extrinsic motivation for learning in students might come from parental traits or promises as well as job aspirations. Extrinsic motivation, as opposed to enthusiasm, is linked to the anticipated advantages of an action.

According to Fuqoha et al. (2018), low and intermediate-motivated students assumed that mathematics was easy at first but would get more difficult in the end. It occurred as a result of students' failure to study properly and frequently. Quitter attitude is the root cause of low-motivated and intermediate-motivated students' dissatisfaction with math because learners' attitudes toward mathematics are regarded as an important component in describing how mathematics is learned, which is characterized by learners' emotions and what they value, including prior experiences. At the same time, success and praise from peers or teachers will provide a sense of accomplishment and improve students' ability to exert effort in response to the problem's learning objectives, namely the need to do something to learn, the need to achieve results after learning, and the need to overcome learning difficulties. Thus, motivation, whether intrinsic or external, is critical for the learning processes of students.

In terms of learning mathematics lessons, students need to be interested to be motivated. The ability of the teacher to engage children and inspire them to understand mathematics is crucial. Mathematics teachers must be able to appropriately assess their students' motivational orientation to help them study mathematics. Students' interest in mathematics is essential to this process. Additionally, teachers can encourage students to flourish in math by igniting their enthusiasm and motivation in the subject. Students need to be interested in mathematics in particular to be motivated and capable of describing mathematics learning. Students' motivation played a part in fostering their eagerness to keep studying mathematics. Simultaneously, students' interest in mathematics can be sparked through incentives (Tambunan et al., 2021).

In conclusion, as highlighted in the related studies above, motivation can be integrated into different teaching approaches and strategies. Teachers, in addition, can modify their teaching approach that incorporate motivational elements so the students can be motivated to learn. As presented from the related studies, there are many measures and certain methods that teachers can consider in their teaching approach of which these methods collectively encourage motivation among the students. Considerations on how students' prior level of motivation and perceptions towards mathematics, can serve in how teachers can spark the interest of their students. As students learn

mathematics in the current shift of learning mode, their motivation will play a huge role in how they can consistently engage with the lessons presented or generally, their mathematics learning achievement which can be beneficial to them in many ways.

Methodology

Research Design

Heideggerian Phenomenology is being used in this study with a qualitative approach. The study aims to examine the participant' experiences during the present shift in learning mode in terms of their motivation in learning Mathematics and offer remedies to the existing issue. Additionally, it clarifies the significance of their experiences' presence.

Participants

The study utilized the purposive sampling approach, in which participants are identified to stress their lived experiences as their motivating component toward studying mathematics. Moreover, an inclusion criterion is supplied to assess the study's limitations.

Inclusion Criteria

- Enrolled in CTU-Moalboal Campus on the First Semester S.Y. 2022-2023 from BSEd-Math 1 Students
- Students are currently taking math subjects in the current Semester.
- Students have experienced modular learning in their past academic year

Procedure

Letters of consent were created by the researchers, one signed by the school authorities and another letter for the participants for their voluntary participation in the study. Upon receiving the approval, a schedule was set for the participants for a face-to-face interview within the campus. All answers were audiotaped with the participants' consent. A semi-structured questionnaire was used with the interview (Smith, 2019) and was checked and approved by the experts (Cabello & Bonotan, 2021). Throughout the data-gathering process, the ethical considerations were rigorously observed (Bryman & Bell, 2007).

Data Analysis

This study uses the Interpretative Phenomenological Analysis (IPA) anchored on the modified Van Kaam Approach popularized by Moustakas. Horizontalization is one of the seven key steps; which also includes the experiences, which were reduced to their invariant constituents; to generate core themes, thematic information clustering was used; multiple data sources comparison to validate the invariant constituents; individual textural descriptions construction; composite structural descriptions construction; textural and structural descriptions synthesis into a statement.

Ethical Considerations

This study uses Bryman and Bell's (2007) ten significant principles that is associated to ethical consideration. These ten ethical steps are considered when conducting the study and these are as follows: (1) all research participants are not compromised and not subjected to be harm in any possible ways; (2) it is essentially prioritized to respect the dignity of the research participants; (3) formal consent from the participants is attained before to the study; (4) The confidentiality of the participants in the study is protected and ensured; (5) Every piece of information gathered from the participants is highly secured and protected with a commitment to privacy;(6)It was guaranteed that all organizations required to participate in the study and research participants would remain anonymous; (7) The purpose of the study should not be misinterpreted and exaggerated (8) Disclose of any forms of affiliation, funding sources and potential conflicts of interest is required (9) Research-related communication must be reliable and credible (10) It is best to steer clear of misleading information and biased representation of primary data findings.

Results and Discussion

After gathering the data from the analysis, the researchers generated three essential themes; Theme 1: The Broken Drive, Theme 2: The Rebuilding, and Theme 3: The Hope. These three themes encapsulate the lived experiences of first-year Bachelor of Secondary Education Major in Mathematics in their motivations for pursuing their chosen course.

Table 1. *The Analysis*

Horizons	*Textural Language*	*Themes*
"Because the fact that it is hard and I have a very, not so very good fundamental, ay kanang wala koy good nga fundamental kanang kuan gani history sa math, kana ganing dili kay ko good ana and naagian pa jud og Covid, it's very hard for me to adjust." (Because the fact that it is hard and I don't have a good fundamental, I don't have a good fundamental especially in history of math, I am not good of this and especially when COVID came, it's very hard for me to adjust). (P2)	Lack of Learning Fundamentals	The Broken Drive
"Kuan siya maka-discourage kay feel nako dugay maka-catch up." (It's discouraging because I feel like it will take a long time to catch up.) (P1)	Pace in Learning	

"Kay katung pag last time pag-high school nako naa jud toy topic nga wa jud nako nasabtan unya didto ko nagsugod og kanang wala nay gana gani sa math." (Because the last time I was in high school there was a topic that I didn't understand and that's when I started to have no interest in math.)	Missed Out	
"It can discourage me and make me think negative things, like, 'What if I get bad grades' and it's worse than that, I am slow to catch up". (P4)	Negative Thinking	
"Kuan, kay sa word pa lang daan nga mathematics, para nako lisod siya." (The word "mathematics" itself for me is difficult). (P10)	Subject Perception	
"It affects me a lot especially in emotional aspect of life because it really touches my ego and my mental health." (P7)	Effects on Emotional aspect	
:Yes, because it is not my first choice." (P8)	Not the First Choice	
"Yes, kay kuan man gud siya lisod gani unya hinay kayo ko kakuan og math." (Yes, because it is really difficult and I'm a slow learner in Mathematics.) (P5)	Pace in Learning	
"Simply because, kuan te, lisod siya lisod gyud siya and kuan man gud nakaingon kung lisod pero ang uban sayon ka kuan man gud wala koy tarong nga foundation sauna bah, lahi akong kuan gani strand sauna unya nikalit kog Mathematics ron mao nang lisod siya para nako." (Simply because, it is really difficult and why I can say that it is difficult but for others it is easy because I don't have the right foundation at first, it is different from my strand before and then suddenly I shift to Mathematics that is why it was difficult for me.) (P6)	Lack of Learning Fundamentals and Pace in Learning	
"I handle it by studying, time frame, giving importance to the subject." (P7)	Learning Preference	The Rebuilding
"Work hard, time management and kuan kanang motivation, e-motivate nalang imung kaugalingon." (Work hard, time management and motivation, motivate yourself). (P3)	Allotted Learning Capacity	
"Communicate with my classmates and ask help through internet." (P2)	Independent Learning	
"My inspiration is my family and for myself, I want to be a better person, unya naay trabaho sa kuan, unya makahumag skwela." (My inspiration is my family and for myself, I want to be a better person and have a work then to finish my studies). (P3)	Learner's Parental Involvement	The Hope
"Sa kagustuhan nga makagraduate ko ug makatabang sa pamilya, ana, ug sa akong mga kuan mao ra to." (I want to graduate and help my family, that's all.) (P6)	Self-Driven by Personal Goals	
"Self – Believing that I can do more; Family – That Always encouraging me; People – who are always there for supporting me; Instructor- I can do something." (P7)	Self, Parental and Society Involvement	
"For me mathematics is interesting and it help me a lot in my everyday life that's why I want to pursue more." (P9)	Learning Capacity	
"It motivates me to do better and learn better to improve my skills in mathematics because of the difficulties." (P9)	Self-Driven	

The Broken Drive

The desire to pursue something, an urge of motivation is essentially required. The reason for a person's motivation in mathematics can be deliberately seen because of its reason (Supitri, 2022) however, as there is a shift in the learning mode currently in education, students have challenges in terms of learning mathematics in the new normal setting.

As Participant 2 said:

"Because the fact that it is hard and I have a very, not so very good fundamental, ay kanang wala koy good nga fundamental kanang kuan gani history sa math, kana ganing dili kay ko good ana and naagian pa jud og Covid, it's very hard for me to adjust." (Because the fact that it is hard and I don't have a good fundamental, I don't have a good fundamental especially in history of math, I am not good of this and especially when COVID came, it's very hard for me to adjust)(P2)

The mismatch between the strand they pursued in the previous school year and the course that they are currently pursuing will affect their motivation to learn mathematics. At the same time, having no profound expertise in learning mathematics, will also become a reason for such an issue. Also, they don't even have enough profound expertise in dealing with mathematics. This makes it even more

difficult to learn when the pandemic arises.

As Participant 1 said:

"Kuan sIya maka-discourage kay feel nako dugay maka-catch up." (It's discouraging because I feel like it will take a long time to catch up.) (P1)

When students encounter difficulties while learning mathematics this experience leads students to become disheartened as a result also of their negative thoughts. In addition, they will fall behind in terms of learning the concepts of a certain lesson in Mathematics.

As Participant 3 said:

"Kay katung pag last time pag-high school nako naa jud toy topic nga wa jud nako nasabtan unya didto ko nagsugod og kanang wala nay gana gani sa math." (Because the last time I was in high school there was a topic that I didn't understand and that's when I started to have no interest in math.)

As stated by the participant, just because of a topic that they missed out on learning in their previous school year, the student then takes a hard time catching up through the current discussion lowering their level of motivation. Also, this will create a gap in the way they will learn the succeeding topics in mathematics.

As Participant 4 said:

"It can discourage me and make me think negative things, like, 'What if I get bad grades' and it's worse than that, I am slow to catch up". (P4)

With students' negative experiences in learning Mathematics, students would eventually have negative thoughts about the possible worst scenarios such as failing grades and being left behind in their lessons.

As Participant 10 said:

"Kuan, kay sa word pa lang daan nga mathematics, para nako lisod siya." (The word "mathematics" itself for me is difficult). (P10)

As stated by the participant. Students saw this subject as difficult which caused them to lower their motivation. Whenever they hear the word mathematics it sometimes scares them. The way they have negative perceptions of Mathematics will affect the way they understand the subject. Particularly, it will lower their motivation to learn.

As Participant 7 said:

"It affects me a lot especially in the emotional aspect of life because it touches my ego and my mental health." (P7)

Math is challenging for many students especially Participant 7 because learning it involves the value of patience and perseverance. Several students find that a mathematics subject involves complex work, and answers are not easily attained to them which all these aspects can affect their motivation to pursue studying it. Math problem-solving can take on a new dimension by using unusual strategies that depart significantly from the norm. This demonstrates that, if we desire it to be, mathematics can be entertaining and thrilling.

As Participant 8 said:

"Yes, because it is not my first choice."

Taking a course that is not a student's first choice would never be easy. There will be a lot of adjustments to be done and a lot of things to cope with. Studying a course that is not your choice can cause discouragement to the student and that makes it even worse to understand the lessons of every subject under the course. This would be a lot more of a challenge because a student will never be interested in his studies and therefore will not pay attention to the activities that need to be accomplished.

As participant 5 said:

"Yes, kay kuan man gud siya lisod gani unya hinay kayo ko kakuan og math." (Yes, because it is really difficult and I'm a slow learner in Mathematics.) (P5)

Some students have learning difficulties in mathematics, especially slow learners like Participant 5. Most of the math problems are very hard to understand for slow learners, and it affects their motivation both mentally and physically. If a student is slow in catching up with math lessons, he will undoubtedly become concerned and discouraged by himself.

Participant 6 stated that,

"Simply because, kuan te, lisod siya lisod gyud siya and kuan man gud nakaingon kung lisod pero ang uban sayon ka kuan man gud wala koy tarong nga foundation sauna bah, lahi akong kuan gani strand sauna unya nikalit kog Mathematics ron mao nang lisod siya para nako." (Simply because, it is really difficult and why I can say that it is difficult but for others it is easy because I don't have the right foundation at first, it is different from my strand before and then suddenly I shift to Mathematics that is why it was difficult for

me.) (P6)

A basic foundation is an important aspect of dealing with the subject of mathematics. It seems to be difficult for students without that basic knowledge that has been learned before. In addition, taking different strands from their senior years and a sudden change of mind-shifting to mathematics is somewhat new to them, which is why mathematics for them.

The Rebuilding

As cited by Zamroni et al. (2022), the key to improving performance at work, in school, and in social settings is a person's learning style. The capacity for understanding and learning varies greatly from person to person. Since some people learn at a fast, medium, and slow pace, others frequently need to use multiple methods to grasp the same concept. According to Sinaga (2022), students' motivation and learning style have an impact on how well they learn mathematics. Student interest in learning mathematics may be increased through learning motivation. Students who are highly driven both internally and externally will desire to engage in educational activities and work hard to achieve high standards of academic success. Student achievement may also be impacted by students' preferred learning modalities. Students do better in math classes the more motivated they are and the more actively they learn.

Participant 7 mentions that,

"I handle it by studying, time frame, giving importance to the subject and self - believing that I can do more."

The coping mechanism for students who are taking mathematics is to study very well with the subject. They set a time frame and gave importance to the subject, as well as focusing their minds to learn more about this subject, math, and also believing that they can do more in handling the things that make the subject mathematics difficult.

Participant 3 stated that,

"Work hard, time management and kuan kanang motivation, e-motivate nalang imong kaugalingon." (Work hard, time management, and also motivating myself.)

Building the students' motivation to handle difficulties in mathematics is to work hard, cope with the fundamentals of math, have good time management to have enough time to understand the subject, as well as motivate themselves to continue what they have started.

Participant 2 further added that,

"Communicate with my classmates and ask for help through the internet."

Another way for the students to handle difficulties in mathematics is to have a helping hand with their classmates. They are learning together with the use of the internet, adapting to the pace of technology to understand everything that makes the subject difficult.

The Hope

The students' attitudes toward the subject of mathematics positively contribute to their learning achievement in learning it. Students who are more likely to have high mathematics achievement are those who are interested in studying mathematics and pursue activities related to it. They are also most likely to lean on the belief that learning mathematics yields a positive outcome, and they also are identified as someone who trusts in their capabilities in mathematics (Hwang & Son, 2021).

Participant 3 stated that,

"My inspiration is my family and for myself, I want to be a better person, unya naay trabaho sa kuan, unya makahumag skwela." (My inspiration is my family and for myself, I want to be a better person and have work than to finish my studies). (P3)

As stated by the participant, a student's motivational background can be rooted intrinsically and extrinsically. For instance, a student is driven intrinsically to learn mathematics with a reason for self-benefit or in the context of self-improvement academically. Either of the two motivations, depending on the context of the motivational root of the student, will help the student to cope with the difficulties encountered and initiate oneself to find a bright reason to learn.

Participant 6 mentioned that,

"Sa kagustuhan nga makagraduate ko ug makatabang sa pamilya, ana, ug sa akong mga kuan mao ra to." (I want to graduate and help my family, that's all.) (P6)

An extrinsically motivated student may be driven to learn rooted in external aspects such as achieving or acquiring something. In the context of the participant's response, a student can be driven extrinsically to have a certain purpose to significant others of the student such as family, friends, or other people that are deemed important to the student in a way of providing contribution or help to them.

Participant 7 stated that,

"Self - Believing that I can do more; Family - That Always encouraging me; People - who are always there for supporting me; Instructor- I can do something"

At the same time, the people in the direct interaction with the student, paired with the mindset that a student has, and the support that the student received, as pointed out by the participant, are aspects that help a student to be motivated to learn and also aid the student to continue despite of the negative experiences or difficulties in learning mathematics.

Participant 9 stated that,

"For me mathematics is interesting and it helps me a lot in my everyday life that's why I want to pursue more."

As highlighted by the participant's insights, a mindset that a student has in terms of how they see mathematics in general with the wonder it will have significance or will help them daily is also a part of the reasons that drive the student to learn persistently. When they recognize the importance of mathematics and significance, this will establish a positive perspective that helps their construction of motivation.

Participant 9 stated that,

"It motivates me to do better and learn better to improve my skills in mathematics because of the difficulties."

On the other side, even though students faced a lot of struggles in dealing with Mathematics. Students frequently develop a positive mindset, which can lead to them being better individuals when dealing with mathematics problems. Learning difficulties can sometimes serve as a positive drive to study harder.

Conclusions

Motivation in mathematics is an essential element for a student to succeed. This element will guide the students to continue learning and gain confidence in the field of arithmetic. Yes, knowing mathematics is always perceived as DIFFICULT by the majority of students. Such difficulties can lead to DISCOURAGEMENT, which leads to students' overthinking of their grades and what their parents might say. Additionally, WITHDRAWING FROM THE COURSE might be the easiest solution for them, but then again, they think of why they started. It is recommended to hear these students out. One of the factors that helps students REBUILD their motivation is the involvement of their families. They should listen to the struggles and problems that their child is up to. Families play an important role in encouraging their children rather than dragging them down, so words from the family are the most powerful support that students can rely on. Moreover, for students to find HOPE, teachers and professors must contribute to the encouragement of the students. It can be done most only by making mathematics fun and enjoyable to learn. Teachers and professors must work hard to motivate their students by demonstrating that mathematics can be learned and that it is not something to be afraid of. Overall, mathematics is important because it is useful in our everyday lives, and students must now start to engage more in it.

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