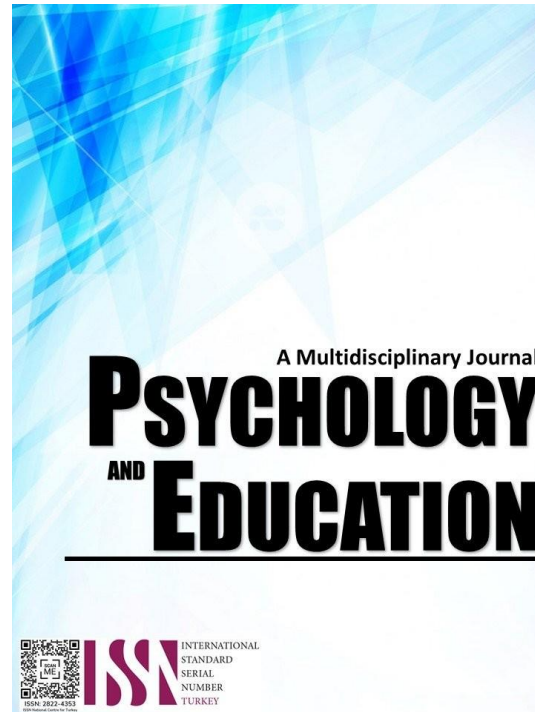


# **A WRONG TURN TO THE RIGHT DIRECTION: THE LIVED EXPERIENCES OF PRE-SERVICE MATH TEACHERS**



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## A Wrong Turn to the Right Direction: The Lived Experiences of Pre-Service Math Teachers

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### Abstract

Mathematics has been known to be an intimidating subject to study, which leads many students to choose other courses instead of majoring in Mathematics. This qualitative study investigated the lived experiences of the students who chose Mathematics as their second option, the challenges they faced while taking the course, and the variables that influenced their decision to specialize in Mathematics education in college. Using the Heideggerian Phenomenology and Interpretative Phenomenological Analysis (IPA) based on Moustakas Modified Van Kaam Approach, the study analyzes the narratives of 16 participants from Bachelor of Secondary Education (BSEd) Math 1 students at Cebu Technological University-Moalboal Campus and identifies four core themes: (1) The Seeker, (2) The Warrior, (3) The Motivated, and (4) The Consequences of Choices. The findings suggest that these students have developed a strong sense of purpose and motivation despite facing challenges along the way. It is recommended that schools should implement programs to change student's perspectives on BSEd Mathematics courses and further investigation of various instructional techniques and approaches should be done to foster the appreciation of Mathematics among students.

**Keywords:** *mathematics pre-service teachers, Heideggerian phenomenology, lived experiences, instructional techniques, motivation*

### Introduction

Mathematics has always been perceived as an intimidating subject to study, let alone the mere thought of pursuing college programs that specialize in the said subject. Many students even try to look for programs that have little to no mathematics involved in their syllabus, as a result of their perceived apprehension when facing the subject, which is more collectively called "math anxiety." Math anxiety, as defined by Ganley et al. (2019), is the feeling of tension or discomfort that one feels when solving math problems in real-life settings or academic settings. Nonetheless, even with all their efforts to avoid these types of programs, many still end up taking these courses due to other numerous factors, such as family, parents, friends, financial constraints, employment opportunities, and work satisfaction (Kazi & Akhlaq, 2017). Many students consequently often struggle in their chosen courses, where they either make wrong solutions or do not comprehend the problems at all (Redolosa et al., 2024). Consequently, only a few studies have recognized, delved into, and pursued this problem which is intended to be addressed in this undertaking and discussed in the following literature. Questions now arise, asking whether college students who took college programs related to mathematics as a second option achieve success in their chosen career path.

According to Palestro and Jameson (2020), negative emotions have always been believed to arise from students when they encounter Mathematics, which has resulted in undesirable outcomes whether in academic or non-academic aspects. Various reasons have been pointed out that cause such phenomena, such as individual, environmental, and the perceived abstractness of the subject (Vakili & Pourrazavy, 2017). Because of these factors, many students develop negative attitudes toward Mathematics, creating a self-fulfilling prophecy that destroys almost any chance for them to be successful academically or learn the necessary math to make educated informed decisions (Rogers, 2017). As a result, students tend to avoid situations and courses related to math, where math anxiety proved to be crucial in their career choice; here, a lack of interest and anxiety in math had detrimental effects (Luttenberger et al., 2018). It is evident that during college more than thirty-five of students switch majors consequently (Speer & Astorne-Figari, 2019). However, students still cannot entirely avoid math, as it is an integral part of instruction from the early ages of human civilization up to today (Acharya, 2017). Thus, college students have to accept that Mathematics is unavoidable, as it has proved to be useful in many aspects such as the sciences, commerce, and humanities (Ngussa & Mbuti, 2017). Fortunately, many of them become successful in their careers, including those that are professionally rewarding careers that continue to involve mathematics (Baryshnikov et al., 2017).

In postindustrial nations, young individuals who are starting higher education make their course selections in light of the general lack of clarity surrounding their future employment possibilities. As a result, when student teachers begin their teacher education programs, such uncertainty can be unsettling. This means that different student teachers may have different preferences for how to deal with their uncertainties. Moreover, this study will methodically lay hold on the factors of whether students who take college programs related to mathematics as a second option have a better chance of succeeding in their chosen career path (Bacong et al., 2023). Some of these factors that affect the motivation of students in choosing Mathematics as a major include value in mathematics, mathematics instructors, economic factors, and the foundation for the other sectors. The ways of constructing the mathematical content are practice and more practice, work along with the teacher, self-study, and group discussion. The researchers learned from the interviews conducted that students have perceived Mathematics as unimportant for their careers (Mazana, 2019). Even secondary school students who choose to major in Mathematics have a lower likelihood of continuing their studies in the subject when they reach college (Tamu, 2020).

It creates an opportunity for math students to understand or interpret information critically, as Mathematics is a particularly detailed subject. For students, learning usually happens most effectively when information can be applied to real-world situations. This, mathematics has considerable significance for everyone, as it makes life more orderly and less chaotic. Furthermore, Bacong et al. (2023) stated that teaching Mathematics can instill qualities that help people be able to think critically, logically, and innovatively, although some students express dislike for the subject and are not interested in studying it.

It has been observed that Mathematics has remained persistent as an intimidating subject to study, due to various contributing factors. Thus, this study aims to investigate the lived experiences of students who took Bachelor of Secondary Education, majoring in Mathematics as a second option, and the challenges they faced in taking the course. Moreover, it aims to determine the variables that influence students' choices to specialize in mathematics education in college and their basis for pursuing the course.

## Literature Review

Mathematics is indeed essential to many facets of the modern world's society, including business, infrastructure, and even daily life. It has proved to be fundamental in the development of civilization, advancement of the sciences, and organization of everyday concepts. However, the problem of math anxiety persists in many students, resulting in their reluctance to take math classes or courses that intensively study Mathematics. Many still struggle with the subject, which breeds a negative feeling about math among students. However, various pieces of literature seek to investigate this case more, shedding light on what could be the underlying factors of math anxiety and avoidance of career choices related to math. The following literature aims to further explain the nature of this study by tackling the students still having negative feelings or still struggling with math subjects. Siaw et al. (2021) focused on this, explaining that students believe that learning and mastering mathematics is a difficult topic, where "math anxiety" is one of the leading to the pupil's struggle or difficulty in learning mathematics.

It has been noted that math anxiety affects the career choices of students, resulting in them feeling dreadful, helpless, and mentally disorganized. These findings have already been established to be reflected in students' enthusiasm in pursuing careers in STEM disciplines, where more students are more likely to forego taking Math classes. Consequently, students suffer from a lack of knowledge about math, which affects many other aspects. Studies have also found that students form beliefs about math early on, positive or negative, and can become very hard to change once already established. But when students are given enough support and opportunities to learn and succeed in math, they can cope with their problems with math anxiety (Walters, 2018). Anxiety and math attitude are important predictors of educational outcomes related to achievement, which this study has identified as a source of learning difficulties.

The motivations behind Secondary Pre-Service Teachers' Mathematics decision to pursue a career in mathematics education were examined in a study by Madinno (2018). The social benefits of teaching mathematics have influenced the Pre-Service Teachers' decision to pursue the teaching profession in addition to their acknowledged mathematical skills and interests. The impact of education on the lives of adolescents, the perceived teaching abilities of educators, and their desire to teach, as well as the job security and opportunities for educators, were discussed after this. The least important professional option, according to them, was teaching mathematics. Time for family and societal responsibilities came next. The results show that the Secondary Pre-Service Teachers in Mathematics consider 10 reliable and important concepts while choosing mathematics as a career. The Secondary Pre-Service Teachers in Mathematics differentiate between the mathematical, the educational, and the combined mathematics teaching components when describing their reasons for choosing to pursue a career in mathematics education.

According to Vargas (2021), to thrive in today's modern world, every person must acquire mathematical knowledge in their daily life. In contrast, many individuals continue to have trouble executing mathematical tasks, which translates into unfavorable emotions and rejection while completing mathematical tasks that demand critical thinking. This literature review examines several ideas, including anxiety in math, number sense, and mathematical thinking, the most likely cause of math anxiety, various diagnoses, and treatments to address this issue.

Education's foundational topic of mathematics fosters students' growth as critical thinkers. Mathematical education and proficiency can help pupils think more critically, logically, and abstractly. The fundamental abilities of mathematics include problem-solving, estimation, reasoning, and creating linkages between events in the real world. According to Siaw et al. (2021), numerous students believe that learning and mastering mathematics is a difficult topic in the classroom. The phenomenon known as "math anxiety" is one of the important aspects leading to the pupil's difficulty in learning mathematics. Anxiety related to mathematics is known as mathematics anxiety and can vary depending on the person. Determining how students' levels of math anxiety affect their math performance in class may hold the key to enhancing students' knowledge of math.

To be successful in a certain industry, one must make an effort to overcome challenges. College students who had taken developmental math and later finished a college-level course were the main subjects of this study. Fundamentally, the study is focused on the following key inquiry: the shared experiences of students who once studied developmental math and completed a college-level math course. The study is primarily concerned with the following central question: What are the common experiences of previous math students who have passed a math course? Additionally, it looks into the students' earlier math classroom experiences, their experiences in the college-level math course, and their future aspirations now that they have finished the course.

Over the past few years, the minority's preference for mathematics programs has remained stable. The problem is examined in research that highlights the experiences of a woman who has achieved success in mathematics. Examining their experiences has led to a greater understanding of the conflict between external achievement and internal worries that affect people's ability to navigate the difficulties and supports they encounter along the way. Studying this literature in-depth will help us understand what success in the field of mathematics might entail, the components that contribute to it, as well as how the situation shifts from one that is perceived as a wrong turn to one that is become the right direction.

Numerous factors are perceived to contribute to students' failure in learning mathematics. Casinillo et al.'s (2020) study placed a strong emphasis on the cultural elements that affected the problem. Beliefs, valuing practices, and exposure to technology-related instructional resources are some of the aspects that have been discovered concerning students' degree of accomplishment when learning mathematics. As a result, this literature helped the researchers understand how students behave in today's classrooms in terms of their value-based study habits for mathematics. Analyzing this study's potential applications in further detail demonstrates how essential mathematics is to people's daily existence and well-being (Distor et al., 2022).

Significant obstacles limit productivity and hinder college graduation for students who are deemed unequipped for university work (Ando et al., 2022). The majority of undertrained students enroll in state universities, which use a range of developmental educational models to facilitate undertrained learners' achievements (Olleras et al., 2022). To improve students' achievement and shorten the duration it takes for them to complete the course, a corequisite course in mathematics has just been put into place. The progressive math prerequisites can be quickly completed by enrolled students in this corequisite course, which also gives them the chance to take college-level coursework and receive academic credit. However, a person's perception of efficacy affects their performance, perseverance, and effort as well as how likely they are to take on difficult tasks and learn new things. The specific course of action one decides to take, the amount of effort put into tasks or activities, and the way one approaches challenging tasks are all influenced by effectiveness. When faced with challenges and losses, self-sufficient students can maintain their efforts and blame their mistakes on a lack of effort or knowledge. Students who are aware of their agency and academic self-efficacy can act in ways that will help them achieve their goals and succeed in school (Reyes, 2022).

Consciousness and anxiousness were used by the researcher to make hypotheses, as well as the sub-themes of student effort and teacher coping strategies, physical and emotional reactions, the learning environment, and prior academic performance. In the phenomenological study on anxiety and self-efficacy, there is a general theory that states: "Anxiety is related bodily and among the participants, emotional states, the learning environment, and past academic performance while mathematics self-efficacy is tied to students' effort and teachers' coping techniques. Anxiety related to mathematics is characterized by tension, aversion, annoyance, and terror. It is a handicap that causes students to struggle in math. The unease that caused kids to completely ignore mathematics is evidence that this is the case. It has been stated that certain pupils may not be able to master mathematics because of the topic. According to the researcher's own experience, poor teaching practices may be responsible for the reduction in students' mathematical performance or their inability to understand the subject. Therefore, before taking any steps to address the aforementioned source of challenges, it may be necessary to comprehend the reasons behind students' negative opinions of the study of mathematics (Reyes, 2019).

Researchers have also noted that there have been other causes to why students lack motivation to study Mathematics. Some find it boring, some are intimidated by it, and some fear humiliation when they are in class and cannot cope with the pace of instruction. However, on the other hand, some factors dictate the motivational level of students in studying the subject. Such factors significantly affect the choice of course of some students, especially when Mathematics is involved. Some of these include the perceived intrinsic value of Mathematics, Mathematics teachers, economic considerations, the foundation for other fields, and the construction of Mathematical content through practice, practice, and more practice, collaboration with teachers, self-study, and group discussions are the motivating factors for choosing Mathematics as a major.

In conclusion, it has been shown that math is indeed a challenging and intimidating course to take, let alone studying the subject. As a result, many students are hesitant to take courses that are inclined toward math. However, there have been other factors that were found to affect the choice of course of students. It has also been observed that many students lack the motivation to study the course since they feel anxious when facing mathematics. Nonetheless, there are still students who choose to pursue math courses, where they experience difficulties in getting through their field of study but still manage to succeed in their chosen field. Such things were explored in various past literature, including the literature contained in this paper which aims to support and explain the nature of this study.

## Methodology

### Research Design

This research study used Heideggerian phenomenology to probe the lived experiences of the participants. Furthermore, it investigated the lived experiences of students who took college programs related to Mathematics as a second option and whether they achieved success in their chosen career path, which is the primary goal of this research. The researchers had a thorough discussion with the participants and posed questions concerning their college course choice, reasons for pursuing BSEd Mathematics, challenges experienced, and motivation in completing the course to explicate their experiences regarding the phenomenon of the study. The questions serve to help the researchers get a better understanding of the results and substantiate them. Follow the format I gave. After

stating the research design, describe it. Then, state the importance of this design to the core of the phenomenon, not how the design helped you in uncovering the lived experiences of the participants.

Participants

This study utilized a non-probability sampling technique, specifically using purposive sampling. The mentioned sampling technique was meant to elicit further elaboration from participants about their lived experiences in taking a college course, specifically BSEd Mathematics, which is different from their first choice. Additionally, inclusion criteria were developed to find the ideal participants for this study, where 6 people took part in the study.

Inclusion Criteria

- The participants should not have had BSEd Mathematics as their first-choice college course.
- The participants must be currently taking up a bachelor's degree in BSEd Mathematics.
- The participants must be currently taking subjects that involve advanced Mathematical concepts, such as College and Advanced Algebra and History of Mathematics.

Procedure

To gain approval for conducting an interview, a transmittal letter was made and sent to the intended participants of the study. This is contrary to the inclusion criteria. Upon the participants' approval, the researchers will have the authority to interview them through either online or face-to-face interviews. The study's ethical consideration was strictly adhered to when collecting the data (Bell & Bryman, 2007).

Data Analysis

This study made use of the Interpretative Phenomenological Analysis (IPA), which was modified by Van Kaam and popularized by Moustakas. This is comprised of seven main steps, which are horizontalization, reduction of experiences to invariant constituents, thematic information clustering to create core themes, comparison of multiple data sources to validate the invariant constituents, creation of individual textual descriptions, creation of composite structural descriptions, and synthesis of textural and structural descriptions into an expression.

Ethical Considerations

In this study, Bell and Bryman’s (2007) list of 10 important concepts related to ethical thinking was used. The following ten ethical principles are taken into account when conducting the study: (1) All research participants are not jeopardized and are not exposed to harm in any way; (2) Respecting the dignity of the research participants is of utmost importance; (3) Formal consent from the participants is obtained before the study; (4) The confidentiality of research participants is protected and ensured; and (5) Every piece of information gathered from the participants is protected and ensured. (6) It was ensured that all parties required to participate in the study and research participants would maintain their anonymity; (7) Exaggeration or misrepresentation of the study's purpose should be avoided; (8) All forms of affiliation, sources of funding, and possible conflicts of interest must be communicated; (9) Research-related communications must be truthful and transparent; (10) False information of any kind and biased representation of primary data must be avoided.

Results and Discussion

Four themes emerged in this study - Theme 1: The Seeker, Theme 2: The Warrior, Theme 3: The Motivated, and Theme 4: The Consequences of Choices – after analyzing the data. These themes highlighted Cebu Technological University-Moalboal Campus BSEd-Math students' choice in pursuing BSEd-Math, although it’s not their first choice.

Table 1. *The Analysis*

<i>Horizons</i>	<i>Textual Language</i>	<i>Themes</i>
"Akong family mostly teachers' man sila. Unya niingon sila nga in demand ang Math mao to, nag-Math na lang ko."(My family is mostly teachers, and they said that Math is in demand, so I pursued Math.) (P3)	Influence from Family	The Seeker
"Second option nako kay BSEd-Science; ga BSEd-Math lang ko bahalag hate nako ang numbers kay di ko ganahan ug BTLEd ug BEED." (My second option is BSEd-Science; I pursued BSEd-Math even though I hate numbers because I neither like BTLEd nor BEED.) (P6)	Easier Option	
"Ganahan jud unta kog architecture pero wa koy choice pag enrollment, ga BSEd-Math nalang ko since maoy available nga course then pandemic sad to na time. Bahala nag lisod pero numbers give me soothing feeling sad." (I would like to pursue architecture, but I don't have a choice when it's time for enrollment, so I'll just go for BSEd-Math since it's available, and then there's a pandemic that time; it's hard, but numbers give me a soothing feeling.) (P9)	Sense of Availability	



<p>“So, my challenges in taking this course is my “lack of patience” especially in solving different kinds of math problems and dealing with lot of school works.” (Lack of patience is my challenges in taking this course especially in solving different kinds of Math problems and dealing with lot of school works.) (P9)</p>	Addressing Patience Problems	The Warrior
<p>"[I feel] contented na lang. Wala man koy choice. [Yet I want] nga i-pursue na lang. Di man sad ko ganahan ma-irregular [student]]. [Though] sometimes, dili ko mamotivate sa akong mga [some] classmates, but mamotivate kos akong mga [new] friends nga classmates ra sad nako.” (I don’t have a choice, I’m contented because I don’t like being an irregular student, that’s why I pursued this knowing that this can lead me to many challenges but by the help of my friends, they motivate me to overcome those challenges.” (P3)</p>	No Way Out	
<p>“As of now, yes, nakontento ko kay tungod kay usa ana nakakita kog mga bag-ong classmates nga andam mutabang, andam mutudlo. Mga teachers nga andam pud mo-consider ug approachable, especially sa majors namo. Mga higher levels nga andam mutudlo namo kay tungod naagian ni nila (naa siyay chance Ma’am, if ever kanang we are in financial stable nami kay sa kwarta man jud mi magipit ba. Kay hinuon pud, if ever mubalik kog Grade 12, naa japon chance ang Math kay to be honest, I love Math pero murag ga-adjust pa lage ko karun kay lage 1st year pami. Na culture shock pami, ay ingani diay ning college, lahi raman sa high school).” (For now, I am satisfied because there are classmates, higher levels, and teachers who are willing to help and teach, especially in our major. I love math, but I’m still adjusting to it now, because there’s a big difference in college.” (P7)</p>	Strong External Support	The Motivated
<p>“Taking this course BSED-MATH inspires me because mao ni syay akong panghugutan ug inspiration nga muhuman ko. Dili nalang nako hunahunaon nga lisod ni sya kay kani nagahatag kanako ug great opportunity sa akong future.” (Taking this course BSED-MATH inspires me because this is the root of my inspiration to succeed. I don’t think of it as difficulties because this gives me a great opportunity for my future.) (P8)</p>	High Hopes	
<p>“Kuan, public speaking. Kanang magtabi sa atubangan, kana juy main kuan nako, di kayko confident basta anha sa atubangan magtabi. Adjustments, especially kay layo ang skwelahan. Wa kaayo ko naanad nga... diris Dumanjug, okay ra ta to duol, nya naanad ko kay naay Civil Engineering. Anad nas lugar. (Kuan, basta sa College and Advanced Algebra, nya naay problem-solving. Naay mga kanang mag-involve og mga taas nga sentences, dinha. Makutaw ang utok.)” (I’m not confident with public speaking; in short, I don’t want to talk in front. Then, (I made) adjustments too because I am not very used with the fact that the school is far. I am accustomed to here in Dumanjug because Civil Engineering is available. Also, my mind is challenged when there is problem-solving and long sentence are involved, especially in College and Advanced Algebra.) (P16)</p>	Stage and Word Fright	The Consequences of Choices
<p>“BSEd MATH is a quite difficult because of its major subjects which is most are dealing with deep solving. It is not an easy subject/course because it requires high analytical skills and patients when solving math problems. In secondary education, dapat naa jd kay confidence, knowing nga we are future teachers, kanang dapat mag anad-anad nnata nga muatubang ug kadaghan, kay teachers man ta, kita maoy great leader.” (BSEd-Math is a quite difficult subject because it deals with deep problems and requires high analytical skills and patience. But in secondary education, there should be confident, one must get used to facing the crowd because we are future teachers, we are great leaders.) (P8)</p>	Extensive Thinking Process	

## The Seeker

The selection of a major is a vital academic decision that undergraduate students will have to make (Ogang et al., 2022). The major that a student chooses will determine the type of career path they will pursue and the skills they will acquire during their undergraduate studies (Emia et al., 2022).

As evidenced by the statement from Participant #3,

*"Akong family mostly teachers' man sila. Unya niingon sila nga in demand ang Math mao to, nag-Math na lang ko." (My family is mostly teachers, and they said that Math is in demand, so I pursued Math.)*

It highlights the importance of considering factors such as family background and industry demand when choosing a major. It also shows how career opportunities on the job market can influence a student's decision in choosing their course in college.

Participant #6 said,

*"Second option nako kay BSEd-Science; ga BSEd-Math lang ko bahalag hate nako ang numbers kay di ko ganahan ug BTLEd ug BEED." (My second option is BSEd-Science; I pursued BSEd-Math even though I hate numbers because I neither like BTLEd nor BEED.)*

This highlights that the participant's decision to pursue a major in Math is influenced by factors other than personal interests, such as

career aspirations or the perceived job market opportunities in the field, rather than by their interests or passions. Students may not have a strong interest in or passion for Math but they have chosen to study it because they believe it will lead to better career opportunities or higher earning potential in the future.

As stated by Participant #9,

*"Ganahan jud unta kog architecture pero wa koy choice pag enrollment, ga BSEd-Math nalang ko since maoy available nga course then pandemic sad to na time. Bahala nag lisod pero numbers give me soothing feeling sad." (I would like to pursue architecture, but I don't have a choice when it's time for enrollment, so I'll just go for BSEd-Math since it's available, and then there's a pandemic that time; it's hard, but numbers give me a soothing feeling.)*

The statement highlights that the participant chose to study Math due to the limited options available and may have found solace in numbers despite the difficulties caused by the pandemic. It also shows the impact of external factors such as course availability and the pandemic on students' academic decisions.

The Seeker theme examines the decision-making process of undergraduate students when choosing a major in Education and Math. The responses of the participants suggest that students' choices are influenced by factors such as family background, industry demand, career aspirations, and perceived job market opportunities. Additionally, external factors such as course availability and pandemics can also play a role in a student's decision. It also highlights that students may not always choose a major based on their interests or passions.

### The Warrior

According to Pale (2018), an endeavor was made to create an outline of challenging secondary mathematics curriculum subjects. Teachers' knowledge of students' errors was investigated coupled with solutions for remedial education. To determine which of the ten areas that were chosen posed the greatest risk of errors and misunderstandings among the sample students, multi-items were generated in each of the areas with varying degrees of difficulty (Mira et al., 2022).

Participant #3 said,

*"Lack of patience is my challenge in taking this course especially in solving different kinds of Math problems and dealing with a lot of school work."*

Many students are afraid of math and because of that, they put this subject as a second choice in looking for a college course.

Participant #3 mentioned that,

*"I don't have a choice, I'm contented because I don't like being an irregular student, that's why I pursued this knowing that this can lead me to many challenges but with the help of my friends, they motivate me to overcome those challenges."*

The study paints a comprehensive picture of the environment in which children learn mathematics by including teachers' reflections and vivid examples from their classes.

Secondary mathematics aims at producing a person who will be numerate orderly, logical, accurate, and precise in thought. The person should be competent in appraising and utilizing mathematics skills to play a positive role in the development of modern society.

### The Motivated

Finding different ways to motivate students and how it developed in years past following how school practices and professional student-teacher relationships can have an impact on the student's achievements (Wigfield et al., 2019).

Participant #1 said,

*"For now, I am satisfied because there are classmates, higher levels, and teachers who are willing to help and teach, especially in our major. I love math, but I'm still adjusting to it now because there's a big difference in college."*

A sudden shift in education has tremendously affected the students, learning much more in freshmen college students meeting new people and working in a new environment. These various people that surround us aren't just a display, but it has significantly made a great impact to move forward much more in times of difficulties.

Participant #2 said,

*"I make it an inspiration rather than think negatively about it because it's a great opportunity for my future."*

This sentiment is shared by a first-year Math student. This student makes the Math subject an inspiration despite the difficulties of it. Moreover, students generally feel less anxious and more excited to explore concepts when they're learning in real-life situations.

Negative moments are a great new opportunity to learn. This instance is simply a call to think positively and make it to make the students firm. Challenges are part of the process and experiencing various approaches to the problems is a must to grow and develop that benefits the future life you desire (Baisac et al., 2022).

This theme The Motivated emphasizes how students are motivated to obtain a mathematics degree. There may be moments when this stage proves to be difficult, but this is common when things are new. Furthermore, the motivated theme emphasized that they are satisfied with taking the math degree and that, despite the difficulties of math, the mathematics degree is still a great opportunity for them and can guide them toward their future. In other words, they still love math, which is why they are taking it.

### The Consequences of Choices

Getting to college is a step into adulthood, which can be challenging because of the independence they attain. This period in a student's life has been known to lead to increased stress, risky behaviors, and mental health issues (Johnson et al., 2010). Such a situation can be intensified by various factors like opting for a second-choice college major, as students need to motivate themselves when they do so.

As Participant #16 said:

*"I'm not confident with public speaking; in short, I don't want to talk in front. Then, (I made) adjustments too because I am not very used to the fact that the school is far. I am accustomed to here in Dumanjug because Civil Engineering is available. Also, my mind is challenged when there is problem-solving and long sentences are involved, especially in College and Advanced Algebra."*

Adjustments can indeed be challenging, especially when one is accustomed to their environment. This situation becomes more difficult in the face of new and demanding tasks, including problems that require extensive and deep thinking. While it may be normal to experience difficulty in any adjustment stage, it can still prove to be more difficult than expected.

Participant #8 also said:

*"BSEd-Math is a quite difficult subject because it deals with deep problems and requires high analytical skills and patience. But in secondary education, there should be confident, one must get used to facing the crowd because we are future teachers, we are great leaders."*

Much is expected from college students, especially those that pursue education majors because they are highly expected to become teachers in the near future. Teachers are thought to be a paragon of virtue, given that they are responsible for molding the future leaders of the nation. Thus, they are held to high standards, starting from their college entry. This can prove to be challenging to many students, as they need to be effective communicators and examples of high morals.

With this, the Consequences of Choices theme emphasizes that college indeed requires intensive adjustment in students. This period may present itself to be challenging at times, but this is normal in many things, especially when they are new. Moreover, adjustments and transitions are an integral part of helping students be at ease with their new experiences.

### Conclusions

The essence of this study is that for math students who are taking math courses and who continue their studies, it takes motivation to face the challenges. Despite the difficulties they experienced, especially for those who do not consider Math majors as their first choice, they still managed to take and pursue this course. In this light, the school can implement programs that are intended to change the perspectives of students on the BSEd Mathematics course. This approach can also make the subject more accessible for students who have struggled with it in the past. The researchers suggest that to foster a stronghold and appreciation of the course related to mathematics, one should investigate various instructional techniques and approaches. This could encompass implementing discovery-learning, stimulating students to question and examine the subject matter from multiple angles, and providing hands-on and real-world math concept experiences. Future studies in this field can aid in further understanding and enhancing math education in higher education. Overall, the advantages of taking a math course in college outweigh the potential difficulties or misconceptions associated with the subject. Highlight here the themes in connection with the theory used.

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