

Taken Twice but Persevered: The Narratives of Second-time Takers of Mathematics in the Modern World

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ABSTRACT

This study explores the unique lived experiences of Filipino students who retook Mathematics in the Modern World, highlighting their resilience in overcoming academic challenges. Using a phenomenological research design, the study aims to understand how second-taker students perceived and navigated their struggles with mathematics. Purposive sampling was employed to select 14 participants—seven for in-depth interviews and seven for focus group discussions—based on their second-taker status and willingness to share their educational journeys. Findings reveal that these students faced challenges such as low self-esteem, negative past experiences with mathematics, and academic pressure. Despite these setbacks, participants demonstrated resilience by employing coping strategies like peer support, improved study routines, and personal motivation. These adaptive mechanisms helped them regain confidence and succeed in the course. The phenomenological approach allowed for a deeper understanding of the students' inner experiences, emphasizing the value of their perspectives in shaping support systems. The study concludes that student resilience is influenced by both internal motivation and external academic support, and recommends the development of responsive educational interventions and a supportive learning environment. This research provides valuable insights for educators, curriculum developers, and policymakers in crafting strategies that address the needs of learners facing academic setbacks in mathematics.

Keywords: *Second-Taker Students, Mathematics Education, Academic Perseverance, Philippines*

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INTRODUCTION

The challenge of the second users, who take Mathematics in the Modern World, is not a simple one and it makes it necessary to remember a central role of the discipline in the development of science, technology, and culture. Such students have to go through severe problems, such as stigmatization because of repetition on the same subject, lack of the basics, and lack of special programs, which address their individual problems in learning. Such challenges may greatly diminish their self-esteem and learning progress, and it is crucially important to be more accommodative in our learning practices to empower some of the learners who may not be able to embrace the modern sense of mathematics (Harianti, 2022).

Internationally, learning anxiety has been shown to significantly impact second takers of mathematics-related courses, particularly affecting academic achievement and long-term career paths. In the United States, for example, Baybayan and Lacia (2024) found that approximately 30% of students experienced math anxiety. Similarly, Campos and Edig (2022) reported that 31.3% of secondary students in Singapore showed moderate to high levels of math anxiety, which negatively influenced both their engagement and performance. Locally, the situation is equally alarming. At a university in Mindanao, Philippines, Remo (2019) revealed that 83% of students taking Mathematics in the Modern World failed at midterm, with only 1% achieving a passing grade of 70% or higher. This mass underperformance illustrates a widespread difficulty in understanding and applying core mathematical concepts, often leading to a high number of repeaters of the subject.

While these statistics shed light on the scope of the problem, they fail to capture the personal, lived experiences of second-taker students—their struggles, coping mechanisms, and the resilience required to continue. Prior research, such as Burton (2019) in *From Failure to Success*, focuses on adult learners' transitions through transformative learning but does not address the specific educational and emotional challenges faced by Filipino second-takers. Similarly, Straehler-Pohl and Pais (2019) explored the ideological framing of failure in mathematics classrooms, yet stopped short of providing an in-depth look into the personal narratives of students forced to repeat the subject.

Therefore, despite the growing body of literature on mathematics education, there is still a significant gap: no study has deeply explored the lived experiences of second takers of Mathematics in the Modern World, particularly among non-board program students at the Kapalong College of Agriculture, Sciences and Technology in Barangay Maniki, Kapalong, Davao del Norte.

This study addresses that gap by employing a phenomenological approach to capture the individual journeys of these learners—their experience of failure, motivation to persist, and the support (or lack thereof) they received. By giving voice to these narratives, the research provides new insights for improving educational support, instructional practices, and institutional policies. The findings will be disseminated through hardcopy publications placed in academic settings, submitted to international journals, and formally presented to school faculty and staff to foster dialogue and policy consideration. Copies will also be placed in the college library for access by students and researchers alike.



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Research Questions

This study explored the lived experiences of students who retook Mathematics in the Modern World. Specifically, it sought to answer the following questions:

1. What are the experiences of second-taker students in dealing with the course Mathematics in the Modern World?
2. Which coping mechanisms do second-taker students of Mathematics in the Modern World use, and which are perceived as most effective in overcoming their academic challenges?
3. What insights can the second takers in Mathematics in the Modern World share to their fellow students and to the academe in general?

Theoretical Lens

This study is grounded in three interrelated but distinct psychological theories: Bandura's Self-Efficacy Theory, Richardson's Resilience Theory, and Deci and Ryan's Self-Determination Theory (SDT). Each provides a unique lens for understanding the lived experiences of students who retake Mathematics in the Modern World after previously failing.

Albert Bandura's Self-Efficacy Theory (1977) focuses on the belief in one's own capacity to succeed in specific tasks. Self-efficacy plays a key role in shaping motivation, behavior, and emotional responses. Students who believe they can succeed are more likely to attempt challenging tasks, persist through difficulties, and bounce back from failures. This belief is shaped by four main sources: mastery experiences, vicarious experiences, verbal persuasion, and physiological/emotional states. In the context of this study, students who previously failed the course may have developed a diminished sense of efficacy. However, as they retake the subject, supportive experiences—such as small academic wins, encouragement from teachers or peers, and exposure to others overcoming similar struggles—can help restore their confidence and reframe their expectations. Thus, Self-Efficacy Theory helps explain the motivational foundation behind their renewed engagement with the course.

Richardson's Resilience Theory (2002), on the other hand, explains how students cope with academic setbacks. Resilience, in this framework, is viewed as a dynamic process triggered by disruption, leading to either maladaptive or adaptive reintegration. In this case, students experience a disruption in their academic equilibrium following failure. As they re-enroll, they undergo a process of resilient reintegration—drawing upon personal strength (e.g., determination, self-efficacy) and external supports (e.g., peers, family, instructors). The theory accounts for how these students not only recover but potentially emerge stronger, developing enhanced coping strategies, emotional regulation, and problem-solving skills. Resilience Theory, therefore, serves as the primary lens for understanding the coping mechanisms students employ to overcome the stigma, anxiety, and pressure tied to course repetition.

Deci and Ryan's Self-Determination Theory (1985) offers additional insight by focusing on the motivational quality of students' actions—specifically, the extent to which they are driven by autonomy, competence, and relatedness. In this context, retaking a failed course is not simply about fulfilling academic requirements but also about re-establishing a sense of personal agency and mastery. As students regain a feeling of control over their learning and experience incremental progress, their sense of competence grows. When they perceive that the decision to re-enroll is self-endorsed rather than externally imposed, their sense of autonomy is strengthened. SDT thus complements the other theories by explaining the deeper, internal motivations that sustain students' persistence despite prior failure.



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In summary, the three theories interact to provide a comprehensive understanding of second-takers' experiences: Resilience Theory explains how they cope, Self-Efficacy Theory addresses their motivational beliefs, and Self-Determination Theory highlights the psychological needs that drive their intrinsic motivation to persist and succeed.

METHODS

Study Design

In the research conducted here, a qualitative approach was employed in an effort to understand better the perspectives of the respondents. The audience for this approach included qualitative researchers. It utilized systematic and focused research of small populations of people to support and help in the formulation of hypotheses. Data were collected through interviews, observations, discussions, and representations. The data obtained were properly assessed and analyzed. Naturalistic, interpretative, and inductive methods were prevalent in qualitative research (Mayan, 2016). The methods also allowed the researcher to build a rapport with the participants. Consequently, the researcher could readily reach out to the participants, which enhanced the validity and dependability of the information. Research design utilized in this research was qualitative, specifically designed to learn and delve deep into the experiences of second-taker students in Mathematics in the Modern World.

This method enabled the gathering of in-depth, detailed stories about the participants' experience, coping strategies, and reflections—levels of knowledge not obtainable with quantitative approaches. Through qualitative emphasis, the research could capture the in-depth, individualized aspects of students' academic experiences, which are integral to a thorough investigation of their individual situations. Meanwhile, I employed phenomenology, which brought into focus and identified particular phenomena from the perspectives of actors immersed in the situation provided. From the human perspective, this was understood as an act of gathering in-depth information and insights using inductive, qualitative procedures like interviews, participant observation, and discussions, and portraying these from the research participants' perspectives (Lune & Berg, 2017). I used phenomenology because it was highly appropriate to use for this scholarly pursuit.

I saw the need to conduct phenomenological research in the local situation, considering that my study endeavored to explain the lived experiences of participants, who were non-board students from Kapalong College of Agriculture, Sciences, and Technology and Santo Tomas College of Agriculture, Sciences and Technology. Moreover, this research approach enabled me to dig deeper into the informants' and participants' lives.

Population and Sample

The principal participants of this research were students from Kapalong College of Agriculture, Sciences, and Technology (KCAST) and Santo Tomas College of Agriculture, Sciences, and Technology (STCAST) who were identified as second-takers of the course Mathematics in the Modern World. These individuals were uniquely positioned to provide authentic, lived experiences relevant to the study's objectives. Their status as second-takers made them the most appropriate informants for capturing the phenomenon under investigation.



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A total of fourteen (14) participants were selected using purposive sampling: seven took part in in-depth individual interviews, while the other seven participated in a focus group discussion. This number aligns with qualitative research standards, which suggest that data saturation—the point at which no new information or themes emerge—can typically be reached within 12 to 16 interviews for phenomenological studies. As Braun and Clarke (2021) note, saturation in reflexive thematic analysis is not a rigid numerical goal, but rather about the richness and depth of the data collected. Additionally, Dörnyei (2007) recommends 2 to 12 participants for focused qualitative inquiry, particularly when the goal is to explore nuanced experiences.

Inclusion criteria required that participants be current students of KCAST or STCAST who had previously failed and were re-enrolled in Mathematics in the Modern World. Only willing and available participants were considered to ensure full engagement throughout the data collection process. Exclusion criteria ruled out students who had dropped out, transferred schools, or were unable to commit to the full duration of the interview process, as this could compromise the reliability and consistency of the data. Participants were recruited through personal contact, following the guidance of Boyce and Neale (2006), who emphasized the value of rapport in qualitative interviewing. In accordance with Patton’s (2002) recommendations for qualitative interviewing, participants were allowed to choose the time and mode (face-to-face or online) of their interviews to ensure they felt comfortable and safe sharing their lived experiences. These steps were taken to foster a trustworthy environment and support high-quality, credible data collection.

Table 1. Participants of the Study

In-Depth Interviews (Pseudonyms)	Occupation	Age	Sex	Code
Empowered	Student	20	Male	IDI 01
Hopeful	Student	21	Female	IDI 02
Determined	Student	20	Female	IDI 03
Resilient	Student	19	Female	IDI 04
Steadfast	Student	22	Male	IDI 05
Driven	Student	19	Male	IDI 06
Courage	Student	20	Male	IDI 07
Total = 7				
Focus Group Discussion (Pseudonyms)	Occupation	Age	Sex	Code
Resourceful	Student	19	Male	FGD 01
Perceptive	Student	22	Female	FGD 02
Innovative	Student	21	Female	FGD 03
Focused	Student	19	Male	FGD 04
Reflective	Student	20	Female	FGD 05
Strategic	Student	20	Male	FGD 06
Persistent	Student	21	Male	FGD 07
Total = 7				



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Data Collection

To collect meaningful and trustworthy data, I followed a structured and ethically sound process. Before beginning the study, I consulted with my research adviser to carefully plan the data-gathering procedures. This early preparation helped ensure that the collection, analysis, and interpretation of data would proceed smoothly. The participants were second-takers of Mathematics in the Modern World from Kapalong College of Agriculture, Sciences, and Technology (KCAST) and Santo Tomas College of Agriculture, Sciences, and Technology (STCAST). I made initial contact in person, introduced myself, and explained the purpose and significance of the study. Building rapport was a priority; I established trust by assuring participants that their identities would remain confidential, that there were no right or wrong answers, and that their honest insights were valued. During both in-depth interviews and focus group discussions (FGDs), I used open-ended, empathetic questioning and maintained a friendly, non-judgmental tone. This allowed participants to feel comfortable sharing sensitive experiences such as failure, anxiety, and academic pressure. To ensure the reliability and clarity of the instruments, I conducted a pilot test of the interview guide with two individuals who matched the participant criteria but were not part of the final sample. Their feedback helped refine the wording and sequencing of questions, ensuring that they were understandable and did not lead or confuse participants. Prior to any data collection, I obtained informed consent from each participant. A written consent form was provided, detailing the purpose of the study, their right to withdraw at any time, the voluntary nature of their participation, and how data would be handled. Participants were asked to sign the form to indicate their agreement. I also assured them that their names and identifying details would not appear in any transcripts or reports. Instead, I assigned codes or pseudonyms to maintain anonymity and confidentiality. The interviews were conducted either face-to-face or online, depending on the participants' availability and comfort. In alignment with Smith et al. (2013), interviews and FGDs were chosen for their capacity to uncover deep personal meanings and perspectives. To support the credibility of the findings, I employed member checking, as recommended by Birt et al. (2016). After transcription, I shared summarized responses with participants to verify the accuracy of their statements and interpretations. This feedback loop helped strengthen the trustworthiness and authenticity of the research. Finally, before initiating the fieldwork, I secured formal approval from my institution's research technical panel. I submitted a permission letter to the Office of the President of both schools, requesting authorization to conduct the study. Only after receiving official approval did I proceed with the interviews.

Ethical Considerations

This study adhered to established ethical standards for qualitative research involving human participants. Prior to data collection, the research proposal and interview protocols underwent ethical review and were approved by the Institutional Research Ethics Committee of Kapalong College of Agriculture, Sciences and Technology (KCAST). Participants were fully informed of the study's objectives, procedures, and voluntary nature through written and verbal explanation. Informed consent was obtained from all adult participants, and assent forms were secured from student participants along with parental/guardian consent. All responses were treated with strict confidentiality, and identifiers were removed from transcripts to protect participant anonymity. Data were securely stored and will be retained for three years before permanent disposal.

Data Analysis

The gathered data in my research was presented and examined depending on the study's objectives or goals. This necessitated a thorough examination of the content of the participants' responses in order to arrive at the study's conclusions. As a result, the goal of data analysis was to look for common



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patterns that could provide ideas to answer the research questions posed in this study. Moreover, the data collected in the study was systematically organized and stored by the researcher using technical resources. The audio and video recorders were utilized to capture the conversation. Working, organizing, and combining material into manageable pieces; synthesizing, searching for patterns, and discussing what was significant and what was to be learned were all part of qualitative analysis. The researcher conducted a qualitative content analysis to provide a more thorough analysis of the study. Content analysis involved making inferences from a text to other states or qualities of the source using a repeatable and precise procedure.

Thematic analysis was used in this study to analyze the collected and acquired data. During the data-gathering phase, the goal was to find any patterns that represented concepts conveyed by the participants. The information was then sorted into logical categories that summarized and made sense of the notes' manuscripts. Thematic analysis is a flexible qualitative analytical method that allowed the researcher to derive new ideas and concepts from data. Moreover, thematic analysis was a suitable approach when attempting to uncover people's views, opinions, knowledge, experiences, or values from qualitative data, such as interview transcripts, social media profiles, or survey responses. Thematic analysis was adaptable, and what researchers did with the themes once they were discovered varied depending on the research goals and the analysis process. Many academics utilized thematic analysis to engage more deeply with their data and gain a better understanding of its content.

Furthermore, I completed the procedures of familiarizing myself with the data, producing initial codes, searching for themes, reviewing themes, defining and identifying themes, and constructing the report. The analytical procedure began with transcription. I separated the data into bits or elements by analyzing it. This was a process in which the researcher attempted to make sense of the data he or she had gathered.

Finally, I listened to the recorded interviews of my participants and transcribed them to facilitate the coding process later on. I reviewed the data multiple times to familiarize myself with the responses and quickly identify the most common ones. I aggregated these common responses and derived a few themes, which I further refined into a select few. I employed data reduction techniques to eliminate irrelevant data and repurpose it as valuable study material for readers to understand. I sorted and organized a substantial amount of qualitative data, enabling me to integrate and categorize it efficiently. Data display techniques were utilized to present the data in matrices, charts, and graphs, allowing readers to draw their own conclusions.

RESULTS

Research Question No. 1: What are the experiences of second-taker students in dealing with the course Mathematics in the Modern World?

The major themes and core ideas for this research question were presented in Table 1. Based on the participants' responses, five major themes emerged: Difficulty in Grasping the Subject Matter, Faced Pressure in Retaking the Subject, Demonstrating Awareness in One's Studies, Emotional Barriers in Learning Mathematics, and Using One's Existing Knowledge of the Subject Matter to One's Advantage.



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Table 2. Experiences of Second-Taker Students in dealing with the Course Mathematics in the Modern World

EMERGING THEMES	SUPPORTING STATEMENTS
Difficulty in Grasping the Subject Matter	<ul style="list-style-type: none"> • "Sometimes, I really struggle because I do not quite fit into this math subject." – (ID105) • "One of the specific challenges I face as a second taker is understanding complex topics." – (FGD03) • "I find it hard to socialize, especially since I retook the subject. They are no longer my batch mates, so I struggle to interact with them." – (ID101)
Faced Pressure in Retaking the Subject	<ul style="list-style-type: none"> • "My struggle as a second taker is the pressure from my surroundings because, of course, people expect me to pass this time since it's my second time taking the subject." – (ID103) • "I focused more on the subject and became serious, knowing I struggled with it and needed improvement, so I decided to study hard." – (ID105)
Demonstrating Awareness in One's Studies	<ul style="list-style-type: none"> • "I discovered more about myself... My self-adjustment and self-awareness have really been enhanced." – (FGD01) • "Emotionally, I feel disappointed, and I start to lose motivation." – (ID102)
Emotional Barriers in Learning Mathematics	<ul style="list-style-type: none"> • "The challenge I faced was overcoming the stress because I kept thinking that it is because of this subject that I ended up in this situation." – (ID107) • "Since I have already taken the course for the second time, there's definitely a chance or possibility that I can better understand the concepts." (ID104)
Using One's Existing Knowledge of the Subject Matter to One's Advantage	<ul style="list-style-type: none"> • "Thirdly, I learned from my past mistakes. Before, I kept repeating the same errors, but now I know where I tend to go wrong and how to improve." (FGD05)

Table 1 displays the respondents' responses on the level of student interest in terms of self-efficacy/belief. The highest mean of 3.60 signifies that the respondents strongly agree that they are willing to work with their teammates. Meanwhile, the lowest mean of 2.61 reveals that the respondents agree that they are capable of self-discipline. Nevertheless, the grand mean of 3.20 implies that the respondents agree with the indicators of self-efficacy/belief which also means that the level of student's interest in career exploration is high.

Difficulty in Grasping the Subject Matter. This is a theme of how difficult it is for students to learn math concepts. The majority of students struggle with challenging topics, feeling isolated and confused, leading to frustration and decreased confidence. Negative histories of math as well as the perception that math is hard also contribute to these challenges. Effective design of teaching practices that connect concepts to life and provide simple explanations can make improvement in students' learning and interest.

"Usahay mag struggle gyud ko syempre dili kaayo ko makahaum ani nga subject aning math subject." (ID1-05)
(Sometimes I really struggle because I do not quite understand this math subject.)



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"Isa gyud siguro sa specific challenges naku ani as a second taker is ang pagsabot or pag understand sa isa ka topic na complex na kaayo." (FGD-03)
 (One of the specific challenges I face as a second taker is understanding complex topics.)

The results revealed that second-taker students experienced significant difficulty in grasping the subject matter, particularly due to the abstract nature of mathematical concepts. Many participants shared that their inability to fully understand the lessons contributed to their initial failure, leading to frustration, self-doubt, and a decline in confidence. This struggle is supported by Hartman and Nelson (2021), who emphasized that limitations in working memory hinder students' ability to apply facts and algorithms unless they are thoroughly memorized, affecting comprehension in complex subjects like mathematics. Similarly, Febriani and Elfrianto (2023) found that mathematics is commonly perceived as more difficult than other subjects, often due to both its abstract content and ineffective teaching methods. This perception can lead to discouragement and negative attitudes toward learning math. To address these challenges, the authors recommend that educators implement well-designed, student-centered teaching strategies that make mathematical concepts more relatable and easier to understand.

Frequency of Themes

Emerging Themes	Frequency (n=14)
Difficulty in Grasping the Subject Matter	4 participants
Faced Pressure in Retaking the Subject	4 participants
Demonstrating Awareness in One's Studies	4 participants
Emotional Barriers in Learning Mathematics	4 participants
Using One's Existing Knowledge of the Subject Matter to One's Advantage	4 participants

Research Question No. 2: Which coping mechanisms do second-taker students of Mathematics in the Modern World use, and which are perceived as most effective in overcoming their academic challenges?

The major themes and core ideas for Research Question No. 2 are presented in Table 3. Based on participants' responses, four key themes emerged: Seeking Help from Other People, Using the Negative Experiences in the Subject as a Motivation, Drawing Inspiration and Motivation from Other People, and Utilizing Available Resources on the Internet.

Table 3. Coping on Challenges Experienced of being a Second-Taker of Mathematics in the Modern World

EMERGING THEMES	SUPPORTING STATEMENTS
Seeking Help from Other People	<ul style="list-style-type: none"> • "I ask for help from my teacher and classmates, and I am not shy to ask questions or request guidance from them." – (ID102) • "As a second taker, I ask for help from my previous classmates because they passed before me and have learned more than I have." – (ID103) • "Do not let negative thinking take over; just because you feel like you will not excel does not mean you should



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Using the Negative Experiences in the Subject as a Motivation	<p><i>give up.</i>" – (IDI01)</p> <ul style="list-style-type: none"> • <i>"Despite the difficulties and the judgments from people around me, I always choose to keep striving and continue moving forward."</i> – (IDI02)
Drawing Inspiration and Motivation from Other People	<ul style="list-style-type: none"> • <i>"My biggest motivation to keep studying is my dreams and my family."</i> – (IDI03) • <i>"My parents are really my main goal—to be able to help them and to successfully finish my studies."</i> – (FGD01) • <i>"Sometimes, I don't ask for help because I want to learn on my own. I watch YouTube videos and focus more on reading the module."</i> – (IDI01)
Utilizing Available Resources on the Internet	<ul style="list-style-type: none"> • <i>"Sometimes, shyness gets the best of me, so I just end up searching on YouTube for how to do things."</i> – (IDI02) • <i>"The specific strategy I employ is watching YouTube videos because they help me understand the lessons taught in the classroom better."</i> – (IDI03)

Seeking Help From Other People. Asking others for assistance became a priority for second-taker learners to cope with their difficulties in Mathematics in the Modern World. By approaching teachers, peers, and acquaintances for assistance, learners demonstrated a positive learning disposition, which enhanced collaboration, support, and cohesion. This response was effective in solving learning problems as well as enhancing students' mastery of the subject matter.

"sa akoang teacher ug classmates gyud ug dili ko maulaw mangutana ug mangayo tabang nila like mag patudlo kog unsaun."
(IDI-02)

(I ask for help from my teacher and classmates, and I am not shy to ask questions or request guidance from them.)

"as second taker nagapangayo ko ug tabang sa akong previews classmate's kay sila man ang nakauna ug pasar sa akoa ug mas daghan na sila ug natun-an sa akoa." (IDI-03)

(As a second taker, I ask for help from my previous classmates because they passed before me and have learned more than I have.)

Through the interview, participants reported that second-taker students dealt with academic difficulties by asking others for assistance. They realized that asking teachers, peers, or knowledgeable students for assistance enabled them to gain a better understanding of challenging ideas. Questions, clearing uncertainties, and study group participation not only enhanced learning but also increased confidence levels while minimizing loneliness. This is consistent with Hidayat et al. (2023), who cited peer tutoring strengths in raising academic performance and social interaction. Likewise, Lobczowski et al. (2021) underscored that peer collaboration fosters self-efficacy and provides varied explanations, although some students are fearful or apprehensive of being embarrassed. These finding highlight the importance of having a judgment-free, supportive learning environment that fosters help-seeking. Moreover, the central notion that is related to help-seeking from other individuals is that students actively solicit outside aid via the Internet to resolve math problems, exhibiting instrumental and executive help-seeking behaviors. They do not work independently but use online sources, search engines, and specific keywords to locate explanations and solutions. This mirrors a wider trend among students to look for



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help outside themselves—a type of help-seeking that is equatable to seeking out teachers or classmates, underscoring the importance of using available resources to navigate academic difficulties (Sánchez Aguilar & Esparza Puga, 2020)

Frequency of Themes

Emerging Themes	Frequency (n=14)
Seeking Help from Other People	5 participants
Using Negative Experience in the Subject as a Motivation	4 participants
Drawing Inspiration and Motivation from Other People	4 participants
Utilizing Available Resources on the Internet	6 participants

Research Question No. 3: What insights can the second-takers in Mathematics in the Modern World share to their fellow students and to academe in general?

The major themes and core ideas for Research Question No. 3 are presented in Table 3. From the responses of the participants, four major themes emerged: Encouraging Retakers to Study and Work Hard, The Need for Enhancing Institutional Support Systems for Second-Taker Students, The Need for Strengthening Emotional Support for Second-Takers Student, and Developing Resilience Along the Process.

Table 4. Insights of Second-Taker Students in Mathematics in the Modern World

EMERGING THEMES	SUPPORTING STATEMENTS
Encouraging Retakers to Study and Work Hard	<ul style="list-style-type: none"> • "They should not give in to laziness; always listen, study, and dedicate time to class. If you are struggling, you need to give it more time—focus on studying and set aside enough time for it." – (IDI01) • "I encourage them and others through my own example—despite struggling before, I continued my studies and kept pursuing my course." – (IDI05) • "What I propose to the school is to provide tutoring for students who are struggling so that topics can be explained to them step by step." – (IDI05)
Enhancing Support Systems for Second-Taker Students	<ul style="list-style-type: none"> • "My suggestion to school administrators is to establish a community that supports the moral, emotional, and academic aspects of second takers. This can include teachers, second takers, and seniors who can encourage, advise, and guide them." – (FGD01)
Strengthening Emotional Support for Second-Takers	<ul style="list-style-type: none"> • "It would also be helpful to pair them with those who have successfully passed the subject so they can give advice, including emotional support." – (IDI 04) • "My suggestion is to provide both academic and emotional support systems for second takers, such as tutorials and encouragement, to help them improve and overcome their frustrations." – (FGD01)



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Developing Resilience Along the Process

- *"Retaking MMW has taught me to be resilient, disciplined, and determined to keep going despite the challenges."* – (FGD 02)
 - *"Retaking MMW has taught me that failure is not the end but rather a part of the learning process. It has also helped me organize my study habits, develop a positive mindset, and improve my self-confidence and performance."* – (FGD05)
-

Encouraging Retakers to Study and Work Hard. Motivating students who are repeating courses to study and work diligently is fundamental in assisting them to persevere in light of their past challenges. Through instilling discipline, commitment, and optimism, the students can enhance their school performance and successfully pass courses.

"Dili lang gyud sila mag padala sa katapul always gyud maminaw, mag study ug muhatag ug oras sa klase. Kung nag struggle ka tagaan gyud nimo siya ug dako na time, more on study ug gahin lang gyud ug oras." (IDI-01)

(They should not give in to laziness; always listen, study, and dedicate time to class. If you are struggling, you need to give it more time—focus on studying and set aside enough time for it.)

"Iencourage nako sila ug ang uban through example sa akoang kaugalingon kay bisan pag nag lisud ko sauna, nagpadayon gihapon ko ug eskwela ug gapadayon gihapon sa pag take sa akoang course." (IDI-05)

(I encourage them and others through my own example—despite struggling before, I continued my studies and kept pursuing my course.)

The research indicated that motivating second-taker students to work and study is a key to their success. This is a persistent theme where perseverance, motivation, and good study habits are the keys to getting over previous failures. Staying on track, planning goals, and getting support assist retakers in remaining committed to learning. Echoing this, Firmante et al. (2020) and Chusna (2023) stressed that persistence, problem-solving ability, and good work habits greatly enhance math performance. A favorable school climate is also essential to instill tenacity and enable students to succeed. The main concept that emphasizes the significance of motivating retakers to study and exert effort in mathematics is that motivational tendency to learn mathematics plays a significant role in impacting students' effort, persistence, and performance in mathematics. The research discovered that unmotivated students tend to learn in a mechanical manner and achieve below average in mathematical literacy, whereas motivated ones are more interactive and are able to understand mathematics better. This calls for support systems and motivational strategies to assist students, particularly the retakers, to remain motivated, study diligently, and enhance their mathematical abilities.

(Hamdiyanti Meti et al., 2024)

Frequency of Themes

Emerging Themes	Frequency (n=14)
Encouraging Retakers to Study and Work Hard	4 participants
Enhancing Support System for Second-Taker Students	6 participants
Strengthening Emotional Support for Second-Takers	5 participants



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CONCLUSION

Results of this phenomenological study help to reveal the experiences of second-taker students who overcame the barriers of rematerializing Mathematics in the Modern World. Such narratives disclose touching revelations about affective, cognitive and motivational aspects of learning mathematics after an initial failure situation. There are significant applied implications of the findings in teaching and learning especially in support of student systems, enhancement of pedagogic activity, and responsive curriculum in building mathematical resilience. The student and mathematics success experience the second-taker persistence knowledge can assist educators, administrators and policymakers gain more insight to the internal and external conditions that culminate in student success in mathematics. It is possible to use the results to establish more responsive and humane learning climates that facilitate various learner demands within institutions.

Systematic intervention-based models including structured peer mentoring, specific academic-focused coaching sessions and facilitated peer study groups would help in helping the students regain confidence and remain motivated to keep trying to pass the subject especially when they are running out of time. In addition, a research study has confirmed the importance of building growth mindset and resilience within mathematics classroom. The instructors should be trained in ways that will enable them to recognize the academic struggle warning signs and act within support rather than expressing stigma. Training in inclusive pedagogical techniques, formative assessment and differentiated instructions could better be carried out in professional development workshops to equip teachers to meet the needs of the second-takers better and support more effectively their learning process. Secondly, this paper highlights the need by institutions to review rigorous policies regarding course retakes and academic probation. Delivering second-chance programs that come with responsible mentoring and adapted learning pace, e.g., modular course structure or individual learning contract, would potentially do wonders to student achievements. Integrating into a curriculum reflective practices, feedback-informed strategies and real world applications, teachers will be able to help make Mathematics in the Modern World a less abstract and a less overwhelming subject to former failure students.

Lastly, the experiences of the second-takers in overcoming this challenge leave some room to do future research on interventions that would make students more resilient, support structures that would be both emotional and psychological, and the long-term outcome of a second-attempt success on the academic trajectory of students. Educational policy formers and leaders are welcome to use the information to establish inclusive learning environments where students feel empowered not only academically but also psychologically and emotionally, as they battle with the demands of tertiary education.

Implication of Further Research

Focus group discussions and in-depth interviews in the study gave detailed information regarding personal experiences of students who retook the study of Mathematics in the Modern World and



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succeeded to persevere finally. The research establishes a foundation on which an analysis of the emergence of academic resilience through failure and persistence will be considered, and this is done by identifying the emotional issues, coping strategies, and development processes they face. The deep qualitative data points to the necessity of listening to the voice of students when developing systems of academic support and reconsidering teaching. Nonetheless, the possibility of the bias of the participants in the recollection and understanding should be considered as with most surveyed data. It is also possible, that the participants can underrepresent or overrepresent their experiences without intending to do so, so the next studies will need to be triangulated closely. This paper employed phenomenological approach to examine the lived worlds of the second-taker-students with a view of exposing the major structures and themes that take over their endurance.

The findings show that math perseverance in students is not solely an outcome of intrinsic motivation but rather the effect of multiple external factors, which may include school support, pedagogical patterns in the classroom, peer connections, and emotional, and psychological health. It is proposed that future research should build on these results and consider even more how second-taker students can be supported in different learning contexts. It is recommended that future studies integrate the mixed methods design concept that will combine qualitative approaches such as interviews, focus groups and quantitative dimensions such as academic performance, anxiety levels or self-efficacy questionnaires. Such a merger would present a more complete sense of the second-taker experience—neither what the students experience and feel, nor how those experiences are translated in measurable academic outcomes. Moreover, the future researchers can discuss the long-term academic and psychological consequences of a mathematics course repetition. The implementation of longitudinal studies, especially to monitor the academic performance of the second-takers, their level of confidence, and the overall development trend in math-related courses is specifically suggested after the first-time retake. This type of research is able to demystify sustainability of success following persistence, or failure in which case further intervention will be necessary on later stages. Monitoring of such pathways can indicate institutional policy on course design, remediation and student support. The other area of future research would be to explore the relationship of teacher-students and classroom culture in shaping the resilience of second-takers.

The studies can be conducted on the instructional style, language used in teaching, and feedback mechanism that either discourage or enables students who have failed some time before. Professional development programs of teachers working with remedial or general education math students may be based on their understanding of the instructional features that can help learners acquire a new motivation. Also, a study of peer support systems, i.e., structured study groups, or formal mentoring programs, could provide information on the way collaborative learning settings promote persistence and academic development in second-takers. The common learning experience may offer institutions with some practical information on specific intervention. This research is of a descriptive nature, but the sample and its coverage are restrictive. As such the outcomes must be accepted as preliminary as opposed to definitive. Future studies are also recommended to include increasing the size of the visited sample in terms of different institutions, geographical locations, and education.

In conclusion, this research is quite fruitful to pursue the research further on the topic of academic resilience of second-take students. Future research that is more insightful into the emotional, instructional and institutional problems of their experience, and has methodological issues with self-reporting bias and minimal scope integrity, may provide a greater, and practically oriented, way of supporting students who have problems but have opted to continue. This ongoing inquiry is key to



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ensuring that failure in the classroom becomes not a dead end, but a turning point in the student's educational journey.

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