

Exploring Challenges Towards Learning Mathematics Among Secondary School Students in Nepal

Maheshwor Pokhrel

Prithivi Narayan Campus Pokhara, Department of Mathematics,
Email Maheshworphokrel@gmail.com.

Abstract

Mathematicians had been concerned with everyday problems. However, today's students are uninterested in learning mathematics. The main objective of this research is to identify students' challenges to learning mathematics. Employing an interpretative research paradigm, the study utilizes a narrative research design involving eight students from public and private schools in the Kaski district. To achieve the research objective, in-depth interviews were conducted with research participants. I had narrated views about challenges towards learning mathematics from my participants. After analysis and interpretation of data, challenges towards learning mathematics were difficulties in learning mathematics, negative perception and external pressure, disruption in learning environment and foundation, changing teacher and lack of support, enjoyment in mathematics practice and fear of teacher, barriers in conceptual clarity and guidance, obstacles in effective mathematics teaching and disinterest, unclear teaching and insufficient support respectively. Moreover, Students face a multitude of challenges in learning mathematics, including issues related to teacher behavior, lack of motivation, the current curriculum, low parental socio-economic status, ineffective teaching strategies, poor home environments, low academic achievements, math anxiety, impractical curricula, and traditional teaching methods.

Key words: Challenge, Learning Difficulties, Mathematics, External Pressure, Teaching Strategies

Introduction

Around the world, mathematics is a crucial subject. In Nepal, all schools must offer mathematics as a subject. For both daily life and advanced study in the sciences and technologies, mathematics is crucial. Every discipline makes use of it. No discipline can progress without mathematics (Acharya, 2017). So, according to Burton (2003), mathematics is the "queen of science". Nitisha (2018) argued that ignorance of mathematics harms all knowledge, as it prevents one from knowing the other sciences or the world. Mathematics is essential for lifelong learning and technical practice, enabling students to find jobs and be successful in the labor market. Modern teaching methods can influence

student interest (Hodanova & Nocar, 2016). Singha et al (2012) claimed that 60% of Indian students consider mathematics to be complex, and 80% of mathematics teachers believe that their students have a negative view over mathematics. Moreover, Khanal (2015) argued that mathematics students in Nepalese secondary schools have difficulty understanding, investigating and generalizing the mathematical situation, leading to a high number of students failing in mathematics examinations. In the context of Nepal, a significant number of SLC students drop out or fail in mathematics. The level of achievement and scores in mathematics lag behind those of other subjects (MOE, 2015). Additionally, according to a report by the Education

Review Office (ERO) in 2013, SLC dropouts encounter difficulties in Mathematics, English, and Science. The statistics further reveal that the failure rate in mathematics stood at 29.62% in 2010, escalating to 38.79% in 2011 and reaching 42.09% in 2012. These figures clearly demonstrate that a considerable proportion of SLC students struggle to succeed in mathematics. Another ERO report in 2017 disclosed that the average grade VIII mathematics score had declined from 50.8 in 2015 to 49.2 in 2017. Year after year, there is a downward trend in math learning achievement. In fact, 59% of students perform at or below the basic level in mathematics, indicating a low level of competency. Furthermore, as per the ERO (2019), less than 32% of students meet competency in class 8. The report also highlights a significant proportion of students underperforming in school-level education, particularly in mathematics. The failure and dropout percentages in mathematics surpass those of other subjects, reflecting a general indifference towards learning mathematics. These issues necessitate an in-depth study of the factors contributing to students' indifference towards mathematics learning. The performance of students in mathematics during the School Leaving Certificate (SLC) examinations is disheartening, evident from the average score of 27.57 and a pass percentage of 41.2 (Ghimire, 2010). The indication of poor performance is a vital problem in mathematics. Students are facing the challenges along with the problems of failure in SEE examination in mathematics (Acharya, 2017). In the context of Nepal, most SEE student's dropout out or fail in this subject. The achievement level and score in mathematics is lower compared to other subjects (MOE, 2015). Likewise, the poor performance of students in mathematics has

been attributed to factors such as challenges with curriculum content, the evaluation process, resistance to adopting effective learning strategies by students, and issues with classroom instruction. (Muskin, 2015). In this regards, Panthi and Belbase (2017) further added that the enrollment of students in mathematics at the school level to the university level is satisfactory but the pass percentage is relatively less in Nepal. Hence, the motive of this study was to explore the factors affecting student's challenges towards learning mathematics in gaining understanding based on the Nepali context. According to Rameli and Kosnin (2017), students' performance in mathematics is a significant concern within mathematics education. However, many students perceive mathematics as a challenging subject to grasp. Factors such as students' attitudes, interests, and teaching methods contribute to lower academic outcomes and students' indifference towards learning mathematics, highlighting the influence of students' perceptions on their approach to the subject (Jumadi & Kanafish, 2013). The way mathematics is perceived by students is crucial for effective learning and teaching. The school system, family background, and students' overall attitudes towards school collectively shape their perspective on mathematics (Pontian, 2019). Perception plays a pivotal role in mathematics learning, as it influences students' indifference or engagement in the subject. Lamb and Fullarton (2002) examined interconnected factors that impact mathematics teaching and learning, encompassing personal, classroom, and school-related elements. Personal factors encompass beliefs, attitudes, readiness, and willingness to learn. Home factors include socioeconomic status, parents' educational background, and occupation.

School factors encompass aspects such as the physical environment, availability of learning resources, and teaching and learning strategies. Joshi (2017) found that most students had a favorable attitude toward mathematics. However, they encountered a number of difficulties, such as lack of confidence, math anxiety, inadequate guardian qualifications, unfavorable home environments, social discrimination, a lack of qualified teachers, a lack of teaching materials, and a lack of essential physical facilities. These elements have a big impact on how students feel about math. In light of the aforementioned perspective, the main focus of research is on why students lack interest in mathematics and struggle to learn it, as well as the challenges they face. Panthi and Balbase (2017) used their research to shed light on the teaching and learning issues surrounding mathematics education in Nepal. They identified several factors that influence teaching and learning, including social and gender issues, achievement issues, cultural factors, and technological challenges. Addressing these issues is critical for promoting effective teaching and learning practices that lead to improved mathematics achievement. Another study, conducted by Rustom and Remali (2016), looked into the difficulties that students face when learning mathematics. They identified several factors that contribute to these challenges, including self-related factors (negative perceptions and self-regulation), teachers (behaviors, practices, and characteristics), parents (limited cognitive, emotional, and financial support), friends (negative attitudes, behaviors, and lack of support), and other factors (the nature of mathematics and assignment pressures). Moreover, the challenges towards mathematics range from pedagogical, social, economics,

administrative and policy aspect to attitudes of students' and teacher's competence of teacher and teachers learning process (Pia,2015). Challenges are the obstacles they encounter in their daily math learning, whether they occur in or outside of the classroom. Students who believe math to be too difficult and confusing to learn will undoubtedly lose interest in and motivation for the course.

Although there have been numerous studies (Acharya, 2017; Alibraheim, 2019; Joshi, 2017; Jumandi & Kanafiash, 2013; Pia, 2015; Pontian, 2018; Pual & Ngirande, 2014; Rameli & Rustom, 2016) on mathematical achievement, anxiety, challenges and attitudes toward learning mathematics in quantitative way. Qualitative approach is a systematics, subjective, used to describe life experience and given them meaning as well as context (Alreshidi,2016). Those researches tried to deeply analyze the participants' pain, pleasure, and experiences towards learning mathematics. Hence, there is a scarcity of qualitative research in Nepal on the challenges that students face when learning mathematics from elementary school to university level. Given this gap, the objective of this study is to explore the challenges that students face when learning mathematics using a qualitative approach.

Objective of the study

The main objective of this study is exploring challenges of students toward learning mathematics.

Research methods

This study employed an interpretative research paradigm with a qualitative approach using a narrative research design to analyze the participants' experiences, pain, pleasure, and attitudes towards learning mathematics (Creswell, 2007). The interpretive research paradigm is basically concerned with

creating meaning to explore the student's challenges of learning mathematics (Paudel, 2018) and it allowed me to offer a considerable explanation of the details that are authoritative in appropriate understanding (Luitel & Taylor, 2005). This research adopts a narrative inquiry approach, utilizing in-depth interviews to capture and interpret the life experiences of 8 students (Poudel, 2018). The convenience strategy was used to choose the participants. Maxwell (1996) stated that "It is better to choose the place where anyone can enter easily or it should be the place where anyone can enter" (p.54). Thus, this is the main reason why I choose the two-secondary school of Kaski district for my research and among them one is public and another is a private school where four participants were selected from each school. The interview protocol, with demographic and open-ended sections, gathered perceptions of challenge toward learning mathematics from 8 participants through audiotaped interviews conducted in a quiet setting with flexibility for follow-up questions (Creswell, 2007). During the interviews, the researcher took notes and recorded the conversations with the participants. The interviews were transcribed, coded, and used to construct narratives regarding the participants' challenge towards learning mathematics. The data was categorized, compared, and analyzed descriptively to gain theme and meaning in relation to the research objective. The research was conducted with care and respect for the participants, creating a friendly and relaxed environment during the interviews. The study ensured quality standard through expert review, member checking for credibility, thick descriptions for transferability, and a natural setting for dependability (Nugent, 2007). Pseudo names were used to protect the

participants' privacy.

Discussion and Meaning Making

The purpose of the study was to investigate the challenges toward learning mathematics. The study's findings were presented as narratives, and the data was gathered through interviews with students. Eight student narratives were examined and emerge themes from each narrative.

Bhagwati's Story

On April 4, 2022, I engaged in a meeting with Bhagawati to delve into the objectives of the present study and establish the interview protocol. During our discussion, I requested her to candidly share her personal encounters with the process of learning mathematics, Bhagawati conveyed, "*Learning mathematics presents several challenges for me. Firstly, I have a strained relationship with my math teacher because whenever I ask questions, he reacts with impatience and anger. This makes it difficult for me to seek clarification and guidance. Secondly, I struggle to remember mathematical formulas, which hinders my ability to solve problems effectively. Unfortunately, I don't have anyone at home who can assist me when I encounter difficulties while studying math. Furthermore, my math teacher's teaching style leaves much to be desired. His explanations during problem-solving are often unclear, making it hard for me and my classmates to grasp the concepts fully. Additionally, his lack of a supportive and encouraging demeanor affects my motivation to excel in math. A particular incident that stands out is when I scored 60 marks in a math exam during my eighth-grade year. All my other teachers congratulated me, but my*

math teacher remained indifferent, which was disheartening. In the classroom, our math teacher typically presents solutions to problems only once, leaving little room for us to understand the material thoroughly. Moreover, his tendency to scold students for their mistakes creates a discouraging learning environment. I wish my math teacher would adopt a more comprehensible teaching approach and provide better support. Additionally, the practice of grouping students based on their grades, which started in the later grades (9 and 10), has a demoralizing effect on me and my peers. In contrast to the earlier grades (6, 7, and 8), where I had positive interactions with my teachers, the communication between me and my math teacher has weakened significantly in the higher grades.”. We discussed the application of mathematics. She said,

“Mathematics is a practical subject that is useful in everyday life. It is used in stores and the business sector, and my favorite school subjects are Social Science and Nepali. In mathematics, formulas must be remembered, whereas in other subjects, the meaning must be understood. I believe mathematics is boring and irrelevant to their daily lives”. Then, we discussed home and social sources related to mathematics. She said, "Mathematics required more understanding and time but I had no sufficient time to study and practice mathematics at home because my fathers and mother are farmers so, I had to help my parents while they were busy farming. My brother and sister are also small, and I have to look after them and there is also a shop in our house so, I have to be at the shop to help with the calculations. My father and mother are uneducated; they can't help me to solve

the problems I face while doing homework in mathematics but they encourage me to read mathematics. After I complete all my works, I read mathematics at night and complete all my homework at night. My parents provide me sufficient teaching materials to learn mathematics. Likewise, when my parents don't have enough money and they borrow with others to buy me materials required for calculations. I borrow my friend's materials for calculations. All this makes it difficult to learn mathematics at home”.

Theme: Difficulties in Learning Mathematics

From above narrative, Bhagawati, a research participant, noted challenges in learning mathematics as a result of teacher behavior and teaching strategies, difficulties in remembering formula, negative perception toward mathematics, a lack of educational opportunities at home, and time constraints brought on by household duties, the course design, and the home environment. Overall, the narrative underscores the various obstacles, both personal and environmental, impacting the student's in learning mathematics.

Pawan's Story

It was April 14, 2022, I fixed the time to meet another respondent of this study, Pawan, we discussed challenges toward learning mathematics.

He said, *“Math is a boring subject and we have to memorize the formulas”*. I asked him if he had any experience of his math teacher not being able to solve the question during his class and left the class without solving the question. He said, *“Yes, it was the day before the exam and the teacher was solving one question of theorem but couldn't solve the problem and left that question. He tried a lot to solve it but he couldn't solve it. Unfortunately, the same question appeared*

in our exam and we couldn't solve it. We shared this with our teachers and they told us not to worry". when I asked, why did you select optional mathematics in grade nine? Is there are pressure from your family and your society? He replied, "Yes. My teachers and parents recommended me to choose optional mathematics and all of my friends have chosen this subject but now I feel math is a difficult subject."

Theme: Learning Mathematics is Tricky (Negative Perception and External Pressure)

In pawan story, pawan views that mathematics is as boring subject, emphasizing the necessity to memorize formula. Moreover, his parents and teachers had force to learn mathematics. Due to pressure, He feels mathematics is a difficult subject, so lack of suitable motivation, negative perception toward mathematics was the main challenges towards learning mathematics for him. Hence, the theme underscores the challenges students face in learning mathematics, encompassing disinterest, teaching gaps, societal pressures, and evolving perceptions.

Sabina's Story

It was April 17, 2022, I made a phone call to another participant, Sabina. we discussed challenges towards learning mathematics for her. She said, "*I don't understand the way my teacher teaches us. Similarly, frequently changing the school also brought some difficulties while learning in a new environment. Memorizing the formulas also seem very difficult for me so, I feel mathematics is a hard subject*". Moreover, she said, "*My performance in mathematics used to be quite satisfactory in the past, but currently, I am only able to achieve passing grades. During my early education from nursery to 4th grade in Kathmandu, I thrived in a supportive*

academic environment, consistently ranking 1st, 2nd, or 3rd in my class. However, when I transitioned to a different school starting from grade 5, my math performance started to decline. This change in schools seemed to affect my math scores negatively, and as a result, my interest in mathematics also waned. I began to perceive math as a challenging subject. One of the reasons for my struggle in math was that my new teachers didn't provide a solid foundation of fundamental concepts, making it difficult for me to grasp the lessons effectively. I believe that if I had received proper guidance and understanding of the core concepts, mathematics could have been an easier subject for me. Moreover, I acknowledge that practice is key to mastering mathematics, but I found it challenging to devote the necessary attention and effort to the subject, further compounding my difficulties".

Theme: Disruption in Learning Environment and Foundation

From Sabina's story, her challenges towards learning mathematics were, she doesn't understand the teaching way of the teachers, less practice of mathematics problems, change of schools, not having good school and home environment, impractical course and math anxiety. The theme underscores the significant impact of disruptions in the learning environment and the lack of a strong foundation in fundamental concepts on Sabina's perception and performance in mathematics. The narrative highlights the importance of consistent teaching approaches and foundational understanding for effective learning outcomes.

Sunima's Story

It was April 25, 2022. I called the next research participant Sunima. We discussed her achievement in mathematics.

She said that *“Up to class 6 I achieved good marks in mathematics but after that math’s seemed difficult for me. My mathematics scored decreased due to changing a lot of schools, and also because of the change in the environment”*. We talked about her interest in learning mathematics, she said that, *“Up to class 6, I liked to study mathematics but from class 6, I didn't like mathematics because our math teacher got changed and I didn't understand how our new teacher taught us. He was not that good at explaining. It is also difficult for me to memorize the formulas. Then, I felt math was a hard and boring subject”*. Again, we discussed about school. She said, *“My teachers never give us any extra material for solving the mathematics problem. Similarly, I didn't even know the answers to simple questions and I ask my friends and they help me with the problems. But I find it very difficult to ask questions to my teachers because I am scared of them. I was close to my teacher in class 8, I was interested to read math and my teachers also used to support me while reading mathematics, and that time math was interesting for me. I also used to get good marks but in class 9, my math teacher got changed and my interest in mathematics got decreased. Now, I don't like mathematics and it is hard for me. Likewise, I don't like the way of teaching of my teacher. Most of the math teachers are strict and the students are scared of them so, students don't like mathematics”*. We also discussed her home and society. She said, *“My father died when I was small because of that I had to support my mother, so I didn't have time for reading properly and it was difficult for me. My mother inspires me to read mathematics but my mother is uneducated so, she can't support me to learn math. My mother provides me money for my examination and other fees and even if she*

doesn't have one, she borrows the money from others for paying my fees and buys materials required for mathematics”.

Theme: Changing Teacher and Lack of Support

Sunima's story revolves around the challenges she faced in mathematics, particularly after changes in schools and teachers. The theme encapsulates her diminishing interest in math due to difficulties in comprehending the teaching style of new teacher. The narrative also highlights the lack of support, low socio-economies status of parents and resources at both the school and home, contributing to a decline in mathematics achievement and overall interest in mathematics.

Santosh's Story

It was April 15, 2022. I took the time of another participant, Santosh.

I took the time to meet him near his house in the park and discussed his interest in learning mathematics. He sincerely answered *“I like mathematics, it is interesting because solving mathematics problems is such fun. In our school, there are two types of subjects as optional. They are optional mathematics and language subjects. I am good at math but I am weak at language subjects, so I took optional mathematics. Solving mathematics problems is very fun and I enjoy solving a mathematics problem than reading other subjects”*. I asked about the application of mathematics with him. He said *“mathematics is an applicable subject. I like mathematics but I don't know where it is used. I want to learn mathematics and I am learning mathematics just because solving the problem is fun but I don't know where it is used.”*

We also discussed the challenges towards learning mathematics then he said,

“mathematics is all about practice. A very intelligent student also can fail if the student doesn't practice it properly. Once, there was my mathematics exam and I hadn't revised anything then I went to give exams and I couldn't attempt the questions properly. That day I realized that regular practice is very important in mathematics. and my teacher gives us interesting questions and also give us tough questions and organize competition in the class which is so much fun. Sometimes in our class, whenever my friends make any mistakes, he counsels them. Our teacher only punishes the students if they commit a big mistake otherwise, they counsel us. And when the teacher punishes us I become really scared. Similarly, while teaching teachers don't tell us how and why the formula is applicable there rather, they only teach us the rule. I was scared of the teachers and now also I am scared of my teachers that's why I don't ask any questions to him and no one asks the questions to teachers because they too are afraid. Moreover, my teacher teaches us the formula and gives one example but he never explains it in detail”.

Theme: Enjoyment in Mathematical Practice and Fear of Teachers

From Santosh's story, He has a positive perception of learning mathematics. His main challenges towards learning mathematics is his teacher and his teaching way and impracticable mathematics course. The narrative highlights the importance of regular practice in mathematics and the need for a teaching approach that goes beyond presenting rules to foster comprehensive understanding.

Manish's Story

It was April 13, 2022. I met a wonderful boy, Manish. I had already told him about my purpose for the meeting. He gave

his perception of mathematics like a story. First of all, I asked him about his experience in mathematics till now and his achievement in mathematics and he said, *“There is nothing as such but it depends upon how you practice mathematics. I always got over 90 till class 8 but in class 9, I got fewer marks but now in class 10, I always get over 90 marks and I am very happy.”* Similarly, we talked about the application of mathematics in daily life. He said, *“It is used to do the calculation in the shop. I use them when I buy books and ask for discounts on them. Once my teacher gave us one problem to solve in the class. I also started doing it. At first, I got wrong then I got right after doing it again and again and it felt interesting. I like mathematics because it can be used in the future if I choose a career in science or computer”.* I asked him about the challenges and barriers that he had faced while learning mathematics. He said, *“Once I was confused while doing one question and I asked my teacher. Even she got confused and told me that it is not important so there is no need to study. Also, once while solving one problem, we found two methods for solutions one was from the book and one was from the solution solved by the teacher. So, we also got confused about which way to follow and this happens most of the time. When I ask my teacher about this, I don't get a proper answer”.* Again, I asked him, *Is mathematics an applicable subject?* He said, *“Yes, it is. Now, we don't have much use but, in the future, it will be useful to us. As I already said that it can be used in shopping, banking, etc. Even my mother, my grandfather uses general mathematics though they are not so educated.”* After that, I asked him about the influence of home and society while learning mathematics. He said, *“my parents*

think that I can do best in mathematics. I also get motivation from my teachers and my parents I if score good marks in exams.” We discussed the challenges of learning mathematics. He said, “Concept should be cleared by the teacher but most of the time we are confused because of lack of concentration and also due to laziness. But this challenge can be solved by the teacher by teaching us in practical, clearer, and effective ways to clear the concept.”

Theme: Challenges in Conceptual Clarity and Guidance

Manish's story revolves around the challenges he faces in achieving conceptual clarity and guidance while learning mathematics. The narrative highlights instances where confusion arises due to unclear explanations from teachers, conflicting methods of problem-solving, and the lack of proper guidance when seeking clarification. The theme emphasizes the importance of effective teaching methods to address challenges related to conceptual understanding and the need for consistent support from teachers and parents.

Abhishek's Story

It was April 14, 2022. I scheduled the time for the interview with Abhishek. I had already told him about my purpose for the meeting. So, we began our conversation about challenges in learning mathematics. He said “*In class 6, I got 60 marks in mathematics but my marks were lowered in class 7 because of the change in school*”. We discussed his interest in learning mathematics. He said: *I like math with logical questions. It is fun but I don't like questions that require more formulas. Similarly, while solving any sort of problem if it gets right in the first attempt then it becomes interesting but if it becomes wrong, it seems boring. When I was reading*

mensuration in class 10, my teacher and my opinion didn't match while solving a problem because we had different ways of solving it and I felt that the way I

solved it was easier”. We discuss the challenges to learning mathematics. He said that “*challenges and barriers to learning mathematics, such as not being able to focus on math subjects, not being able to read things that are not applicable in real life, and not wanting to read things that are not applicable in real life, teaching strategy of teachers, such as following a long way to solve questions and needing time to explain well*”. Again, He said

“*my teacher encourages me; he tells me to study well. He inspires me if I don't know how to solve a problem, if I attempt it then he gives me at least some marks to encourage me rather than leaving the paper blank in exams. She tells us to practice more. She pays attention to the weak students which is encouraging*”.

Lastly, we discussed the challenges and barriers to learning mathematics. He said, “*many students skip the questions which they feel is hard. They only practice those questions which can be solved easily. This is because many of us can't ask the questions of our teachers freely. We think our teacher will scold us for not paying attention but that is not the truth. Even if we pay full attention, some questions are really hard to understand.*

I think many students don't study mathematics because their seniors scare them telling them that mathematics is very hard and this also discourages them. Similarly, some students are also students are lazy too and they don't practice a lot. I think more students can learn mathematics if the teachers teach practically. Moreover, my parents also provide sufficient teaching materials for me. There is also a disturbance because of my friends and family when I spend my time enjoying with them and

concentrate less on my studies”.

Theme: Obstacles in Effective Mathematics Teaching

In Abhishek's narrative, the primary challenge to his mathematics learning was his experience within the mathematics classroom. Similarly, there are several other hindrances to effective mathematics teaching, including an inadequately qualified teacher, teaching methods, lack of logical coherence, unhelpful feedback, and a curriculum that lacks practicality. The theme underscores the need to address these challenge through practical teaching methods, encouragement, and dispelling misconceptions to foster a more effective and engaging learning environment for students.

Kristina's Story

It was on April 17, 2022. I was looking forward to meeting one respondent of this study who is, Kristina. I started to discuss her mathematics achievement until now. She said that *“Up to class 6, my mathematic marks were good but after class six my marks were that not that good and I just got pass marks. I feel bad for not achieving good marks in mathematics because my parents scolded me because of the poor result. I don't like to study mathematics. I am not interested in mathematics. I feel that it is harder than other subjects. I don't understand mathematics. Similarly, I didn't choose optional mathematics in class nine because I felt taking another math subject would be very difficult for me, so I took environmental Sciences as an optional subject. I never received good grades in mathematics that is the reason why I felt that optional mathematics would also be hard for me”.* Then, we discussed the application of mathematics. She said *“Mathematics is an applicable subject and maybe it can be used in the future but I don't know where it*

is used now. I like English and Nepali. I feel relaxed while studying these subjects. I don't understand the way my mathematics teacher teaches us. Most of the time, the concept is not clear to me and I get more confused. The teacher doesn't address our needs and interest. Our teacher comes to our class, writes formulas on the board, solves the problem but they don't discuss with us while solving problems. Sometimes our teachers get confused while teaching and they solve that problem the next day. I like the teaching style of my social study teacher and the class is very interesting but the mathematics class is boring. My teacher doesn't teach in a group and there is no group interaction and discussion with the teacher and friends”. Again, we discussed the challenges and barriers toward learning mathematics for her. She answered, *“The main barrier is that our teacher doesn't motivate and doesn't give basic concepts of mathematics before teaching the topic.”* After that, we discussed her home and social source. She said, *“I have sufficient time to read mathematics at home and I like to read in school rather than at home because my friends help me to solve problems while I am at school. My parents live in Japan and no one can help me help in learning mathematics at home.”*

Theme: Disinterest, Unclear Teaching, and Insufficient Support

The main challenges toward learning mathematics for Kristina include a declining performance in the subject, a negative attitude stemming from poor grades and parental pressure, a lack of interest, and difficulties with her mathematics teacher's teaching style, which lacked clarity and interaction. Additionally, the absence of foundational concepts and a support system, as well as a limited understanding of the real-world

applications of mathematics, contributed to her struggles in the subject. The narrative underscores the importance of teacher motivation, clear conceptual explanations, and interactive teaching methods to address the challenges faced by students and create a more conducive learning environment for mathematics.

Finding and Conclusion

My research question was what the challenges in learning mathematics in secondary school students. The stories shared by Bhagawati, Pawan, Sabina, Sunima, Santosh, Manish, Abhishek, and Kristina point out a detailed picture of the challenges students face when learning math. Under the thematic lens, challenges' toward learning mathematics of research participants are difficulties in learning mathematics, negative perception and external pressure, disruption in learning environment and foundation, changing teacher and lack of support, enjoyment in mathematics practice and fear of teacher, challenges in conceptual clarity and guidance, obstacles in effective mathematics teaching and disinterest, unclear teaching and insufficient support respectively. Under mention challenges toward learning mathematics , students face more sub challenges such as teacher behavior, lack of motivation, current mathematics curriculum, low socio-economies status of parents, meaningless teachers teaching strategy, low parents qualification, bad home environment, low mathematics achievements, mathematics anxiety, non-practical mathematical curriculum, low self-efficacy, poor school administration, class room management, lack of participants' labor, traditional teaching methods, present practice of teaching and math myths, lack of teacher knowledge about pedagogy and content, formula

practice course, present practice of teaching. Moreover, Anxiety, lack of interest, negative perceptions, lack of labor, traditional teaching methods, parental awareness, low self-efficacy, impractical curriculum, poor school administration, math myths, and undesirable society and culture are challenges to learning mathematics for majority of my participant. Addressing these challenges requires a holistic approach, encompassing teacher training, curriculum refinement, and the creation of supportive learning environments, ultimately paving the way for a more effective and inclusive mathematical teaching.

This study attempts to address students' challenges in learning mathematics, reducing their disinterest and boosting the number of students enrolled in the course. It supports educators, decision-makers, curriculum designers, and exporters in identifying these issues, reevaluating teaching techniques, and redesigning curriculum and educational policy.

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