
Teachers Perceptions on the Low Performance of Secondary Level Mathematics Students in Nepal: A Narrative Inquiry

Sachin Poudel

Master of Mathematics Education, Kathmandu University School of Education, Hattiban, Lalitpur, Nepal

Corresponding Author: Sachin Poudel

E-mail: sachin_medmath2022@kusoed.edu.np

ARTICLE INFO

Received: June 16th, 2025

Accepted: August 29th 2025

Published: September, 02nd
2025

Volume: 3

Issue: 3

DOI: 10.61424/issej.v3i3.410

KEYWORDS

Perceptions, Performance,
Social constructivism,
Interpretivism

ABSTRACT

Though the concerned authorities are trying to improve the results of secondary-level mathematics students, the performance of students in mathematics is decreasing per year. So, this research aims to find out the factors in decreasing the results of mathematics students through the narrative of secondary level mathematics teachers. This research incorporates the constructivism as a guiding theory. In this narrative inquiry of three teachers of three different types of schools in the Sunsari district, an in-depth interview guideline is used to collect the data. The interpretivism research paradigm is used to interpret the data and findings. The findings of the study revealed that some causes of decreasing performance of students in mathematics are lack of interest in mathematics, lack of parental support, post corona pandemic effect and excessive use of the internet and gadgets, frequent changes of mathematics teachers, lack of practical learning and instructional materials, problems of curriculum and evaluation. Based on the findings, it is suggested that the effect of the pandemic coronavirus, excessive use of the internet and gadgets must be minimized, adequate well-trained mathematics teachers in their schools must be managed. The curriculum must be revised repeatedly and made practical to live to increase student's interest. Also, parents and administration must encourage, and motivate students to create an interest in mathematics. This research has significant value in the field of research because helps to find the solutions to mitigate low performance and higher failure rate in mathematics. It will be valuable for policy makers, curriculum planners, teachers, students, parents, school administration, and other stakeholders related to mathematics education to make appropriate policies and an effective learning environment.

1. Introduction

Mathematics is important in our daily life. From the time we wake up to go to bed, there is mathematics. At what time do we wake up, how many cups of tea do we drink, and how much quantity of food is required of us per? For every task, there is calculation and mathematics. It is difficult to live our life without counting and numbers. Today, if we imagine doing our daily activities without counting or numbering, then we cannot proceed with our single activities forward. Elaine (2013, as cited in Jekayinfa et al., 2023), suggests that mathematics permeates our environment and is essential to all facets of our lives and daily routines. Thus, it is evident that mathematics plays an indispensable role in our daily lives, serving as the foundation for our activities and essential for our overall well-being.

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It can be considered as a backbone of human development as we know that human civilization also started with the counting of numbers. Jayanthi (2019) highlights that across history, civilizations that prioritized mathematics and its practical applications have consistently witnessed notable progress and advancement. Mathematics is also considered important because it is related to applications in our daily lives. So, we can say that mathematics is related to the activities that we do in our daily lives; it is derived from the cultural practices that we have practiced from generation to generation. i.e., from making food, selling, or buying goods, construction, playing, and even to stitching our clothes, etc. Fatima (2012) also contends that mathematics is involved in numerous everyday tasks, ranging from morning routines such as setting alarms and checking the time, to activities like scheduling, cooking, financial management, and travel arrangements. It helps to solve complex problems in our domestic life such as profit, loss, bill payment, calculating the area of our square, rectangular plot, finding out percentage, interest in our daily transactions, etc. Understanding such importance of mathematics in, today mathematics is considered one of the important subjects in almost all curriculums of the university or board. In Nepal, the educational system requires mathematics to be studied as a compulsory subject up to grade ten, but it becomes an elective subject in higher classes (Shrestha et al., 2021). It is not only the subject that helps us to find out the answer but also it helps us to find out the solution to the problem in real life. Umameh (2011), also states that mathematics imparts vital problem-solving skills to children, which they can utilize in various areas of their lives. Hence, Mathematics helps to increase the problem-solving skills of students by helping to solve problems and meet practical needs such as collecting, counting, and processing data. Mathematics is also important to develop logical reasoning, critical thinking, fact, and truth. Since mathematics is based on data. It helps students to think logically and helps them view and analyze anything in a more sophisticated way.

But having the great role that mathematics in our daily life, its wide applicability, and its importance, most students feel mathematics is a difficult subject to pass. Per year students' results in mathematics are always low in Nepal. Thus, the low performance in this research report indicates the poor mathematics results of students specifically. The research report focusses on the cause of the student's low achievement in mathematics and its discussion. Furthermore, this research also focuses on the performance of students like engagement, performance in classroom activities in mathematics, collaborative tasks, projects, practical tasks, and so on. It tries to find the cause for the low performance of students in such aspects. According to the result of SEE 2079, most students got low achievement in mathematics. According to NEB out of a total of 484,939 students who have participated in the SEE examination; the largest number of students scored an E grade in mathematics. 1, 55,458 (32.05%) out of 484,939 got a grade E which shows that the students have low achievement in mathematics as comparison to other subjects. (SEE Statistics, NEB 2080).

There may be different causes for the low results of students per year however, students often say that mathematics is a hard subject and cannot be understood. They feel mathematics as a boring subject. Students take mathematics as a subject that is not from our society and has no real significance to the real-world context. Even parents, teachers, and administration also take mathematics as a subject burden and the subject gives much pressure every year. However, the low performance of students in mathematics nowadays is not only a problem in Nepal but is taken as a huge problem in all boards and universities. Nur (2010) contends that the challenge of students' insufficient performance in mathematics is not confined to a specific country but is instead a universal phenomenon. Regarding the results of mathematics per year, it has been a great concern and issue for researchers, policymakers, educators, teachers, parents, and even students themselves. So, today's world must think about why students' performance is decreasing in such innovative and interesting subjects. What can be done to improve the results or performance of students in mathematics? This is today's contemporary issue in the education sector.

1.1 My Experience as a Teacher

In the case of my teaching career also I find a very low pass percentage of students at my school in mathematics. Students' participation and their interest and results in mathematics subjects are always less. In the case of my school, one day when I was checking the homework of students, none of the students submitted their homework. They asked for an excuse saying they do not get enough time to do homework. One of the students said,

Student: “*I feel mathematics is very hard and there is no one to teach me at home also, my parents don't send me tuition classes, so I could not do homework.*”

This statement hit my mind. I was disappointed thinking Is mathematics a hard subject or are students thinking of mathematics as a subject from another universe? Their performance in doing homework is also always poor. Once when the school organized a game/sports event i.e., a mathematical race, students were not willing to take part in the event organized by the school. They did not play the game. Even those who took part in the event, their actual level of learning in mathematics was also so poor that they were not able to solve the simple questions below their standards. During the selection of optional subjects in grade 9 also I have observed that the number of students choosing extra mathematics subjects is always less per year due to the low performance in mathematics. I find students not paying attention in class and losing their interest. I thought that there might be different reasons for low performance of students. So, due to this case in my teaching career, I am guided to find out the perceived factors in decreasing the performance of students in mathematics through teacher’s sight. Hence, this study sets out to explore what are the causes of the poor performance of students in mathematics and recommend solutions to mitigate low performance.

1.2 Statement of the Problem

Despite the significant role played by concerned authorities in enhancing the level of secondary-level mathematics students, students' failure rate in mathematics subjects is high. The government of Nepal launched various programs (like Basic and Primary Education Project, Primary Education Project, Secondary Education Development Plan, School Sector Reform Plan, and Teachers Professional Development) to give quality education and increase better performance in mathematics. The government also introduced a letter grading system in the SLC examination from 2072 B.S. But also, the statistical data of SEE 2079 shows that most students got low achievement in mathematics. According to NEB, 1, 55,458 (32.05%) out of 484,939 got a grade E which shows that the students have low achievement in mathematics as compared to other subjects (SEE Statistics, NEB 2080). National Examination Board (NEB) regarding students' performance in mathematics during the Secondary Education Examination (SEE) in the years 2017, 2018, and 2019 reveals that 11.37%, 7.59%, and 7.33% of students respectively achieved A and A+ grades, signifying a significant proportion of students failing to attain satisfactory grades. Furthermore, Educational Review Office (ERO) report (2016), indicates that mathematics achievement ranks the lowest among other subjects at the secondary level. Thus, every year every concerned authority (school, parents, teachers) feels the headache due to the high failure rate of students. There are other problems in students like they often say that mathematics is a hard subject and cannot understand. They feel mathematics as a boring subject. Students take mathematics as a subject that is not from our society and has no real significance to the real-world context. Even parents, teachers, and administration also take mathematics as a subject burden and the subject gives much pressure every year. There is a high level of disengagement in the classroom and, a lack of involvement of students in classroom activities, project work, and practical work. I am a mathematics teacher and every year I feel the most difficult situation to explain the cause of the low performance of mathematics students. In the case of Nepal, I have seen that one party is blaming another for the poor performance of mathematics students per year. During my teaching career also, I found the same condition of blaming each other for the low performance of mathematics students. Therefore, I thought that it is needed to investigate why mathematics students have low performance in Nepal. What are the possible factors that contribute to this high failure rate of students in mathematics? Hence, this topic became a problem for me, and I got connected with this problem to do research.

1.3 Research Purpose

The major purpose of the study was to explore teachers’ perceptions on the low performance of mathematics students in Nepal.

1.4 Research Question

How do teachers narrate their perceptions on the low performance of secondary level mathematics students?

1.5 Significance of the Study

While researching a particular issue, the researcher strives to ensure that the study holds meaningful significance to the stakeholders involved. Thus, being a mathematics teacher and a researcher, I am aware of the benefits of my research study. I believe my research entitled “Teacher’s Perceptions on the Low Performance of the Secondary Level Students: A Narrative Inquiry” focusing on the factors for the low performance of students in mathematics has significance in the field of research because it is helpful to determine the causes for low performance of students in mathematics. It has significance because it not only points out the factors for the low performance of students in

mathematics but also suggests solutions to mitigate low performance in mathematics. Thus, the research will help improve the mathematics teaching-learning activities of the students and reduce the failure rate in mathematics. It will be valuable for teachers, students, parents, school administration, and other stakeholders related to mathematics education to make the learning environment more effective. I hope that my research study will also be useful to government bodies, policymakers, curriculum planners, as well as textbook writers to update the policy and the mathematics curriculum that can favor the students. Finally, the findings of this research study also can be a reference for other students who aim to do further research in this area.

2. Literature Review

This segment encapsulates the terms perceptions and performance, empirical literature review, consisting of data obtained from international and national journals, unpublished theses, articles, magazines, and online resources relevant to the research topic. It then proceeds to explore the theoretical literature, which includes theories pertinent to the research subject.

2.1 Perceptions

In my understanding perception means the understanding thought, or belief system of a person in any subject matter around the world. According to Smith (2021), Perception means our fundamental cognitive interaction with the world which plays a critical role in shaping our understanding of reality. We can also define perception as the description, that is how a person describes the subject around him according to his thoughts. Our perception is influenced by our senses, experiences, and context, shaping how we interpret the world around us. According to Efron(1969), Perception is also an individual's level of cognitive contact or sight with the world around him. So, here in this research also I have included the term perception which indicates the personal thoughts, and beliefs of a mathematics teacher regarding the low performance of mathematics students.

Teachers' perceptions, beliefs, and instructional practices can significantly impact student outcomes. Students' perceptions are instrumental in shaping the learning strategies they employ, thus influencing their academic achievements (Ferreira & Santoso, 2008). McLeod (1989) further emphasizes the significance of students' perceptions regarding mathematics teaching and learning in the field of mathematics education. Consequently, it is essential to explore their perspectives to gain an understanding of the factors contributing to their subpar performance. Therefore, it is crucial to delve into teachers' narratives to uncover their insights into the low performance of secondary-level mathematics students. By understanding the complex dynamics at play in the classroom, we can better inform strategies and interventions aimed at improving student performance.

2.2 Performance

In this study, the performance of mathematics students specifically denotes their success rate in mathematics examinations, their engagement in class, practical work, project work, and so on. According to Schechner (2017) any behaviors, events, actions, or themes can be analyzed as performance. Thus, performance in the context of this research, analyzed was the students' results in mathematics, their engagement in classroom activities, practical's, projects, and interest in mathematics. Findell et al., (2001) discuss mathematics performance as more than just the ability to perform mathematical computations accurately. Performance signifies the measurement of individual progress and the attainment of predefined objectives or goals. Perceptions and beliefs about mathematics stem from past experiences, encompassing both cognitive and affective dimensions (Aguilar, 2016). Thus, the research endeavors to identify the numerous factors impacting students' academic achievements through their narratives. Mutodi & Ngirande (2014), also highlights that a mathematics learner's preference for mathematics stems from their belief structure.

2.3 Empirical Review

Tshabalala & Ncube (2013) conducted a study on the "Causes of poor performance of ordinary-level pupils in mathematics in rural secondary schools in the Nkayi district in Zimbabwe. Their research indicated that learners perceived mathematics as inherently difficult, which is a factor for poor performance in mathematics. Similarly, absenteeism of both the learners and teachers, outdated teaching methods, and uninspiring classroom environments

were the other reasons for the low performance in mathematics learning. Additionally, incompetent mathematics teachers and insufficient support at home were identified as factors affecting students' performance.

Chand et al. (2021) did another research in the same field with the research title "Perceived Causes of Students' poor performance in mathematics: A Case Study at Ba and Tavua Secondary Schools". This research revealed that students' negative attitudes towards mathematics were one of the factors for their low performance. In the research teachers' attitudes and teaching methods, and limited use of technology were also identified as other contributing factors. The study also highlighted concerns like the ineffectiveness of the current mathematics curriculum, and lack of competence among primary school teachers in teaching mathematics are the other factors for the low performance of students in mathematics.

Zachariah Kariuki et al. (2012) also investigated "Factors contributing to students' poor performance in mathematics at Kenya Certificate of Secondary Education in Kenya: A Case of Baringo County" using a descriptive survey research design. The result of their research was that ineffective lecture methods, inadequate physical facilities, and poorly utilized teaching resources were the main factors of poor performance of students in mathematics. Similarly, Overloaded mathematics syllabi, inadequate parental support, and cultural constraints were also the factors contributing the low performance in mathematics.

Suleiman & Hamed (2019) studied the "Perceived Causes of Students' Failure in Mathematics in Kwara State Junior Secondary Schools" the research showed that the factors contributing to students' failure are shortage of qualified teachers, frequent teacher transfers, inadequate textbooks, lack of teaching aids, inappropriate class periods, students' lack of interest, and poor socio-economic backgrounds.

Sa'ad et al. (2014) explored "The Causes of Poor Performance in Mathematics among Public Senior Secondary School Students in Azare Metropolis of Bauchi State, Nigeria". The research showed that negative attitudes, anxiety, inadequate qualified teachers, poor teaching methods, lack of resources, overcrowded classes, and parental disengagement were the causes of the poor performance of students in mathematics.

The research findings identified several perceived factors contributing to decreasing performance, including inadequate textbooks, a shortage of teachers, insufficient library resources, ineffective teaching methods, teachers' attitudes toward the subject, rapid coverage of material, large class sizes, inappropriate entry requirements for the subject, insufficient teaching time, and teachers' competence in handling the subject.

2.4 My Position in this Research

When I went through different research articles to find out the factors for the low performance of students in mathematics. I have noticed is a lot of research that has been conducted to find out reasons for low performance has been done with groups of educators, teachers, students, and many more. But being a mathematics teacher in the recent context, I want to glimpse out the reasons for the low performance of mathematics students from the sight of other mathematics teachers. Finally, I want to conduct the research in my district the Sunsari district of Nepal, where this type of research has not been conducted before. So, these research gaps guided me to research the teachers' perception of the low performance of mathematics students in Nepal qualitatively.

2.5 Theoretical Review

This section contains my theoretical review which has guided my research project.

2.5.1 Constructivism

Constructivism, which was propounded by the Piaget and Vygotsky, states that learning is an active process, in constructive process learners build new knowledge based on their prior experiences (Piaget, 1972; Vygotsky, 1978). This theory is relevant to my research title, "Teachers' Perceptions on The Low Performance of Secondary Level Mathematics Students: A Narrative Inquiry," because it provides a framework for understanding how teachers' perceptions and experiences shape their interpretations of students' academic performance.

According to constructivism theory, teachers are not just passive transmitters of knowledge but active participants in the educational process, they construct their own understanding of student performance based on their experiences and interactions with students (Fosnot, 2013). This implies guides that teachers' perceptions of low performance in mathematics are shaped by the teachers' cognitive frameworks and prior knowledge. Their perceptions are influenced by the specific contexts in which they teach, including the socio-cultural environment, the curriculum, and the individual differences among students.

In the context of my research, constructivism supports the idea that teachers' stories and experiences are crucial to understanding their perceptions (Clandinin & Connelly, 2000). Since narrative inquiry focuses on the lived experiences of individuals, it aligns well with the constructivist view that knowledge is constructed through personal and social experiences. By examining teachers' narratives, we can uncover the subjective meanings they attribute to students' low performance in mathematics, providing insights into how these perceptions are formed and how they might impact teaching practices and student outcomes.

At last, constructivism justifies the focus on teachers' perceptions by emphasizing the active role of teachers in constructing knowledge based on their experiences. This theoretical lens also supports the use of narrative inquiry as a method to explore the complex, context-dependent nature of perceptions.

3. Research Methodology

This section outlines the research methodology employed in the study, which aims to explore teachers' perceptions regarding the low performance of secondary-level mathematics students in Nepal. To address this research objective, I have selected a narrative inquiry approach to gain insight into teachers' experiences and viewpoints.

3.1 Research Method

The research method for this study is a narrative inquiry. Narrative inquiry research is a qualitative research approach that focuses on the stories and experiences of individuals. Narrative inquiry is a qualitative research approach that centers on the collection and analysis of stories and narratives, allowing participants to share their experiences, perspectives, and interpretations of a particular phenomenon (Clandinin & Connelly, 2000). It seeks to understand how people make sense of their experiences and how they construct their realities through the stories they tell. Narrative research is often used in fields such as psychology, sociology, anthropology, and education. It allows researchers to gain a deeper understanding of complex social and cultural phenomena by exploring the subjective experiences of individuals. According to Moen (2006), A narrative is a story that tells a sequence of events that is significant for the narrator and his/her audience. Narrative inquiry research methodology gives a story in the frame of sociocultural theory and personal context. The narrative research design refers to how people use experience and organize meaningful ways (Almaki, 2021). Human beings live by narrating their subjective experiences to justify their works. Flexibility is the power of this method. Its disadvantage is we can generalize and conclude the issues based on personal experience. Despite a lack of generalization, this method increases confidence between the researcher and the participant (Almaki, 2021). So, I have selected this research method for my study. In this study, I took in-depth interviews and tried to find out the experiences and stories of my three participant teachers of the Sunsari district of different schools. I used their narratives for theme generation and data analysis to find out the causes of the low performance of students in mathematics.

3.2 Interpretivism

My research title "Teachers' Perceptions on the Low Performance of Secondary Level Mathematics Students: A Narrative Inquiry" aligns with the interpretivist paradigm, emphasizing the subjective nature of reality and the significance of understanding the meanings attributed to experiences. Interpretivism refers to perspectives that emphasize the importance of individuals' meaningful engagement and involvement within social and cultural contexts (Elster, 2007; Walsham, 1995; Chowdhury, 2014). Adopting interpretivism as the theoretical framework for this research acknowledges that teachers, as individuals, construct their understanding of the educational landscape based on their unique experiences and perspectives. Their perceptions of students' low performance in mathematics are subjective and can be shaped by a myriad of factors, including personal experiences, social interactions, and cultural backgrounds. Recognizing the existence of multiple, subjective realities and perspectives among teachers, the research title aims to delve into the diverse narratives of educators to uncover the nuanced meanings they associate with the low performance of secondary-level mathematics students. Through narrative inquiry, this approach allows for a qualitative exploration that captures the richness and context-specific nature of teachers' perceptions, contributing to a deeper understanding of the complex interplay of factors influencing their views on student achievement in mathematics.

3.3 Field of study and selection of respondents

In this research project, I have selected three participants from various parts of the Sunsari district of Nepal to collect the data. One from public, one from private, and one from 'guthi' school. The private school in Nepal are the schools which runs under the company act and on the sole investment of private sectors. Similarly, public schools are the schools which are runed by the government of Nepal and the 'Guthi' schools are the schools under 'Guthi' act. This are the schools supported by the government and community.

I had set some criteria to select the participants. The first criteria for my participants where my research participants were selected from different schools in the Sunsari district with at least five years of teaching experience in mathematics. Three participants were selected form three different school, one of the teachers was from a private school in Sunsari district. He had been teaching optional mathematics at the secondary level for 6 years in a private school. Another was from the guthi school, who had been teaching optional mathematics at the secondary level for 10 years. Similarly, my next respondent was from the public school of Nepal, who had been teaching mathematics to secondary-level students for 10 years. The third criteria were teachers from secondary level teaching mathematics.

3.4 Data Collection Methods

I have collected the data for the research using an in-depth interview tool. I asked open-ended questions and semi-structured interviews to elicit narratives from the participants regarding their experiences, challenges, and perceptions of the low performance of mathematics students.

I have taken the records of the interview on my cell phone. Then, I transcribed the raw data obtained from the interview with participants. Thus, raw data was then transcribed under different themes. Thematic analysis is a systematic approach to identifying and analyzing patterns and themes within qualitative data (Braun & Clarke, 2006). This method was helpful for the identification of recurring themes and patterns in teachers' narratives regarding student performance in mathematics.

The transcripts of these interviews were then kept as records/data and it was analyzed with the help of different literature reviews for interpretation. Finally, a conclusion of the project research then was prepared.

3.5 Ethical Considerations

Ethics encompasses the set of moral values that a researcher should consider before conducting research. Connelly and Clandinin (1990) say apparency, truthiness, and transferability are potential criteria to consider in narrative inquiry. Also, Lincoln and Guba (1986) introduce two sets of evaluative criteria: trustworthiness and authenticity (as cited in Hatch & Wisniewski, 1995). Further, Hatch and Wisniewski (1995) state fidelity are a criterion for practicing and evaluating narrative inquiry. Similarly, ethical practice and ethical codes are grounded in principles that ensure the free consent of participants, safeguard the confidentiality of their information, and protect participants from any potential harm resulting from their involvement (Clandinin, 2007). Thus, I have tried to maintain ethical issues like apparency, free consent, and trustworthiness by giving all rights to the participants to take part completely voluntarily. I had taken informed consent of the participants and kept the information confidential. It helps to respect the voice of respondent, maintain their privacy, and to bring authentic data. Further, I used their pseudo-names to safeguard confidentiality. Whenever the participants are taken into consideration, meaning making and interpreting the data there should not be any bias and everyone should be treated equally. Resnik (2023) also asserts that ethics offers guidelines that outline acceptable and unacceptable conduct in both research endeavors and the utilization of research outcomes. Thus, to maintain the authenticity, and transferability of the data and research I went to the participants met them in person and took the interview. I tried to bring the experience and narration of participants without any biases. I have maintained fidelity in all the stages of the research project.

4. Data Analysis and Interpretations

This section includes the narratives and interpretations of my three research participants based on the themes generated. Ram, Shyam, and Hari are the pseudonyms for the participants. The interpretations of those themes have been made with the help of relevant literature.

4.1 Short Introduction of Participants

The first participant in my research is Ram who has done B.Sc. and has been teaching mathematics in a private school for 6 years. He has been teaching at 'A' private school in Sunsari for 3 years. Previously he did not think to be a mathematics teacher but had realized his ability to teach others. Later he became a mathematics teacher, and he is happy to be a mathematics teacher.

His schooling was at a government school. He had good academic studies in his childhood, he frequently topped the class. Though he topped the class, his level in mathematics was not good initially, since he used to love only other subjects, like social, and science. He used to love rote learning. But he had a turning point in class 6 when he got the help of his relative brother in learning mathematics concepts. Like his problem, Ram also has experienced different problems with students like lacking the basic concept of mathematics. Every day students don't do their homework. They have poor performance in mathematics.

The second participant in my research is Shyam. He has completed his SLC from a private school in Sunsari district and pursued his +2-science education in Sunsari itself. Following his +2, he earned a Bachelor of Science degree in Physics (B.Sc.). After a hiatus in his studies, Shyam decided to further his education while continuing his career in teaching. He is currently pursuing a Master of Education (M.Ed.) in mathematics, with his thesis work in progress. He is working in B school under Guthi.

During childhood, he had a mixed relationship with mathematics. While he initially showed promise in the subject, he began to struggle around grades 6-9, particularly finding mathematics challenging. However, the turning point came when his brother, intervened after seeing his poor results in the first terminal examination. With his brother's guidance and dedicated practice, particularly in mathematics, his perception of mathematics shifted dramatically. This support inspired him to pursue further studies in mathematics. Finally, during his Bachelor of Science in Physics he discovered a newfound interest in mathematics. This newfound passion for mathematics eventually led him to decide to pursue it as both a subject of study and a career path.

Shyam, drawing from his experience as a mathematics teacher, points out different problems in his teaching career, he observes that mathematics remains a challenging/tough subject for many students. He highlights a significant gap in achievement levels among students, with some excelling and others struggling to even pass. In his analysis of his school, Shyam finds that roughly 50% of students can secure grades above the pass percentage, while the remaining 50% are at risk of receiving just pass marks or failing altogether.

The third participant of my research is Hari. He introduces himself as an educator with 6-7 years of experience, currently teaching mathematics at secondary level. His academic journey includes a B.Ed. and a B.Sc. in mathematics, alongside investments in the share market and studies in economics. Despite being the sole teacher in his family, Hari's childhood passion for mathematics guided his educational choices. Teaching was a natural progression for him after completing his SLC, driven by both his proficiency in the subject and the availability of teaching opportunities in Nepal. He is teaching in C, public school.

Although he didn't foresee himself becoming a teacher initially, now he finds fulfillment in the profession, despite its challenges. Hari acknowledges the difficulties/challenges inherent in teaching, such as the struggle to see students' progress despite concerted efforts, which brings partial happiness, in his teaching career and evokes a sense of seriousness.

4.2 Themes Generation and Interpretation

This section includes the construction of the themes for the low performance of secondary-level mathematics students based on the narratives of the above three participants and their interpretation.

Lack of Interest in Mathematics

When I asked all the participants regarding the interest of students in mathematics during their class, all three research participants narrated that there is a lack of student interest in mathematics and that the poor performance of students is a result of their lack of interest in the classroom. The first participant Ram stated that "*students do not have an interest in mathematics classrooms because they lack basic concepts*". Oginni and Owolab (2012) also express that poor performance in mathematics is attributed to outdated teaching practices and inadequate grasp of basic content knowledge. Ram continued in the interview that, so when students start solving problems they leave in the middle. They do not keep patience, due to which their interest in mathematics is very low, resulting the low performance in mathematics. He narrated in his way that "*While solving problems in mathematics due to lack of basic concepts they leave in middle, or they get confused in half hence they lose patience and interest in mathematics. Due to a lack of*

*interest in mathematics, their overall performance is also decreasing. This type of performance we are having very time". Like the thought Portal and Sampson (2001) also argue that research conducted by teachers indicates that student behavior and attitudes can also play a role in influencing motivation in mathematics. Similarly, Ram also said that students are not conscious, or they show carelessness in their studies. Ram stated that *Students study only during exam hours and at other times they don't pay concentration to their studies. They study only to secure passing marks. Hence their performance is low*". Tarteer and Ismail (2020) also write that students' careless and diminished interest in mathematics contributes to poor performance in secondary school.*

In the same question participant Shyam also replied that the students do not have an interest in mathematics due to several factors. He acknowledges that there is an impact of negative perceptions and statements regarding the lack of interest of students in mathematics. He points out that due to the negative perceptions and statements by the teachers, the student's interest and performance in mathematics are poor. He narrates, "*Sometimes to the low-achieving students some teachers may say that mathematics is not for you. You cannot pass mathematics! Listening to this kind of saying they might have anxiety, fear of mathematics, and lose interest in mathematics. Hence their performance is also poor.* Similar findings are thereby Portal & Sampson (2001) who state that Teachers' habits can negatively impact the classroom learning environment, with low expectations potentially dampening students' motivation. Further Shyam states that during the mathematics class, "*I find some of the students are disengaged in the classroom, they are drawing, and some of them do unnecessary things. It means that all the students do not pay attention in mathematics class equally and this might be either due to the reason that they do not have interest in mathematics, or they do not know mathematics.*" Clark (2013) also discussed that *the active engagement of students in school and classroom activities are crucial precursor for achieving successful outcomes in their academic achievements.*

Through the discussion participant Shaym also revealed that in his school students are from diverse backgrounds. The students are the children of martyrs, bodiless, disembodied, and disabled, who are victims of war, and conflict. He states, "*Thus our students do not have an interest in their studies due to the deep-seated trauma stemming from their family backgrounds*". Aligning with the above statement Jacobson (2021) also says that the widespread traumatic experiences in children are associated with adverse academic outcomes, such as school dropout. Shyam further remembers the incidents of students and marks the question that, *one day when I was teaching, one of my students shared me that, " Sir I remember, one day the police came and arrested my father and killed him shooting front. I was very small and looking all the things just hiding form at side."* Now let's imagine how deep effect of war is in his mind?". He also remembers the incident of other students and narrates "*Some of them have different incident, one student used to tell us that due to the reason that her father married second, her mother killed her father. This was the incident that took place in Inarwa, Sunsari district.*" He ends the narration with the incident in Khotang "*The incident was of Khotang, where all the family members were killed at night, cutting with sharp instrument when they were sleeping. Two daughters were alive by escaping out. Now they are studying in our school*" Now let us imagine how is their mentality? (Shyam). After the narration of the incidents, and marking a question, he further states the condition: "*Such type of students is there in our school. Thus, despite our big efforts in teaching their level of mathematics is not uplifting, due to the trauma they have. Their mind is not ready to capture the things that we teach to them. Hence the performance of students in mathematics is low*". Yohannan and Carlson (2019) also come close to the above condition as they say that young individuals who have been exposed to traumatic events face an elevated risk of experiencing negative developmental outcomes, which may manifest as low academic performance, deficient social skills, and mental health issues.

My third research participant Hari, when asked the same question said that many students are careless in their studies. They have a lack of interest in mathematics due to their carelessness and performance is down. Same as Odogwu and Aliogo (2015 as cited in Tarteer & Ismail 2020) suggest a significant correlation between students' attitudes and their performance in Mathematics. Hari also points out that, unlike other subjects where understanding alone may be sufficient for passing marks, mathematics demands technical accuracy. So, lacking the technical accuracy they feel mathematics boring, and they lose interest. He stated, "*In the case of other subjects' students can write according to their understanding, they can get passing marks easily. But in the case of mathematics, they cannot write free writing. They must have practice and problem-solving skills earned throughout the year. What they have learned they must write technically. So, students take mathematics as a difficult and boring subject. That's why the number of students getting E grades is also high.* Woodward et al., (2012) also explained that problem-solving involves reasoning and analysis, argument construction, development of innovative strategy, etc. and these abilities directly influence students' academic performance scores. During the interview, Hari also claimed that the interest of students is influenced by societal factors such as the mentality of prioritizing opportunities abroad over academic pursuits. Thus,

they are not interested in their studies and performance is down. He shares that, *“now students have the mentality of going abroad after completing +2 level. They think that what happens with the studies? We are going abroad whether we study or not. Due to this, I think that students do not take an interest in their studies nowadays”* So, the performance is also going down. Shrestha et al., (2021) also state the result that achievement in mathematics is influenced significantly by four dimensions: psychological, pedagogical, social, and economic factors that shape individuals' mathematical experiences. Hari finally highlights that leniency in educational policies, where students can progress to higher grades or choose any subject regardless of their academic achievements, is also a factor in the lack of interest in mathematics at the school level. He asserts that, *“Securing any grade they can study or select any subject in higher classes. So, due to this provision students are neglecting mathematics. Thus, their performance in mathematics is going down”*. Bah (2021) also state that the inconsistent education policies within society contribute significantly to the failure of students in mathematics.

The narrative above shows that the students have a lack of interest in mathematics learning due to different causes like lack of prior knowledge, negative perceptions, lack of self-confidence, deep-seated trauma, carelessness in the studies, negative attitude, engaging in other activities in class, societal factors and so on. Lacking prior knowledge and self-confidence makes the weak foundation of students in mathematics, and the negative perceptions, attitudes, trauma, careless habits, and engagement in the other activities in the classroom also keep them apart from adequate practice in mathematics. It finally creates a lack of interest in the subject. So, this shows that a lack of interest in mathematics is one of the causes of low performance in mathematics.

Excessive use of the Internet/Gadgets

During the interview, when the conversation deepened into the cause of the low performance of students in mathematics, participant Ram said that the pandemic coronavirus and its post effect is one of the main reasons for bringing a huge gap in students learning then and now. He expressed his view, *“If we talk about students, there may be individual reasons for them. But I must point out, that the pandemic corona and its post-effect is one of the main reasons for the decreasing performance of students. The education gap of 1-2 years during the pandemic (2020/21) has brought a huge gap in students' levels and learning. The students who must have the concept of lower class, do not have the minimum concept too.”* Contini et al., (2022) also stress that the pandemic significantly lowered pupils' performance in mathematics, indicating a substantial negative impact.

While Ram pointed out that the pandemic coronavirus is one of the major problems for the lack of basic concepts of the lower class and the overall low performance of students, I posed a question, why didn't you launch online classes during the pandemic? He replied, *“Online classes were launched but it was not effective. We could not guide them as physical learning”*. He also shared that Students used to join online classes but were engaged on the internet and social media during online classes, so there was no learning, and its impact is seen in higher classes. Ram: *“At that time students were not responsible for learning, they used to stay in an online class and engage themselves in social media like Facebook and YouTube. They were distracted from learning, and as a result, they did not focus on learning, and they don't have basic concepts, and its impact is seen in students' performance now”*. Similarly, observation was found during the discourse with Hari, at the very beginning, he also said that the students do not have an interest in mathematics and the main cause of the distraction and poor performance in students is the pervasive influence of gadgets and mobile phones. Hari: *“I think that during our days there was not any social media, we used to enjoy naturally and limitedly like playing with friends, playing football, playing 'Pittu', cricket. But in the case of the present generation, I think gadgets, mobile phones are the great distractions in their studies”*. Like both participants Peteros et al., (2022) study has also revealed a substantial negative impact of smartphone usage on academic performance.

Participant Ram further explained the post-COVID impact on students' learning due to the use of gadgets, the internet, and social media during the COVID-19 pandemic. He said, *“We used gadgets as a medium to connect with students during the pandemic, now students have habits of using the internet for long hours, so students are not getting time to practice, and their performance is decreasing, they are having dullness, and feeling of sleep in the classroom due to the use of the internet late at night. Students are having a lack of concentration on their studies and their*

performance is decreasing”. He adds that sometimes parents come and complain to us regarding the excessive use of the gadgets and internet by their children. He claimed in his school, “Now 90% of boys are addicted to playing online gaming and their concentration is out of the study. Hence their performance is decreasing.” Joseph and Adesoji (2023) also noted that mathematics students' addiction to social media has a detrimental effect on their academic performance. Similarly, participant Hari also noted a similar case to Ram, that the pandemic coronavirus and its post-impact on students is another major factor in the low performance of students. He said, “During the pandemic period (coronavirus) we ran our classes through the mobile phone. We made it an easy medium. But that created the negative habit of students using mobile phones randomly. After that, the performance is being down continuously.” He mentions the transition to online classes, which, while convenient, resulted in students developing negative habits related to excessive mobile phone usage. Additionally, he points out that the pandemic disrupted students' learning experiences, with many being promoted to higher grades without fully grasping fundamental concepts. Hari: “The pandemic effect was for almost 2 years so during this time there was no proper learning for students. They were upgraded to 1-2 classes without study. Let's say they jumped to the higher classes without the actual learning outcomes. That gap of study is until there in them. Therefore, due to the jumping of students to the higher level without the basic learning in the lower level so also the reason for the low performance of students in mathematics”. Hari also finally underscores the detrimental impact of excessive gadget usage, internet browsing, and social media engagement on students' study habits. He says, “I think that gadgets and mobile phones are destroying the learning habit of many children and it is decreasing their performance”. He also focused on the post-COVID impact on students like Ram. He notes that students instead of utilizing their time for productive activities, have become addicted to their devices, neglecting their studies, and failing to cultivate essential skills through practice and hard work. He said, “I think that if we start playing mobile phone, we become addicted to it. We don't want to leave it though we have been using it for a long time. So, when students engage in mobile phones, they don't become aware that they are spending a long time. Hence, they are not giving time for their studies, which is the reason for the low performance of students”. Additionally, like their observation, Ng et al., (2017) also identified a noteworthy correlation between smartphone usage and the academic performance of tertiary students.

Finally, Ram bitterly ended my question by saying that the course was lengthy the online classes were not effective, and the duration of teaching hours during the pandemic was also less. So, we were also not able to complete all courses. But also, we were obliqued to jump students to higher grades. Ram: “Due to corona for up to 2 years class could not run effectively, but we were obliqued to jump students to higher classes. Now students do not have the mathematics concept of lower class also, due to that the performance is decreasing”. Additionally, Hari also points out that the pandemic disrupted students' learning experiences, with many being promoted to higher grades without fully grasping fundamental concepts. Hari: “The pandemic effect was for almost 2 years so during this time there was no proper learning for students. They were upgraded to 1-2 classes without study. Let's say they jumped to the higher classes without the actual learning outcomes. That gap of study is until there in them. Therefore, due to the jumping of students to the higher level without the basic learning in the lower level so also the reason for the low performance of students in mathematics”. The research done by Mustafa (2020) also adds that school closures due to COVID-19 have a negative impact on student learning outcomes. The global outbreak of Coronavirus had a detrimental impact on educational activities worldwide. It resulted in widespread school closures, affecting educational systems globally (Wikipedia, 2020b as cited in Onyema et al., 2020).

The narrative above shows that during the pandemic corona students did not get chances to learn properly. This became the initial cause for the weak base in the lower class and its impact is seen in the higher class as low performance in mathematics. During the pandemic, students were called for virtual classes, but the access of students to gadgets and the internet caused the habit of engaging in social media and online games long time instead of learning. They are found to be addicted to gadgets, students are engaged in social media and the internet for a long time and do not give appropriate time for mathematics practice at home. Online games, it is causing problems like sleep and laziness in the classroom. Students do not give adequate time and interest in practicing mathematics at home due to their engagement in social media, the internet, and gadgets. Thus, the discussion shows that students' access to the internet and gadgets is a cause for the low performance in mathematics.

Parental Role

When the discussion reached the role of parents regarding the performance of students in mathematics, all three participants started the narration by stating parents play a great role in their children's performance. However, all three participants admitted that there is a lack of proper parental support and care. The first participant Ram admitted that for the better performance of students, there is an important role of parents too. If parents do not care about their

children, their performance will be low. He said, *“How much parents care for their children, how they coordinate in child’s study also matters the child performance. If parents do not care, then children don’t bring their homework. They remain absent for long days. So, this decreases the performance. In some students’ cases, I find this”*. Sa’ad et al., (2014) also state that insufficient parental involvement in their children's education contributes to poor performance in mathematics among public senior secondary school students.

Similarly, my second participant Shaym pointed out that mathematics is a type of subject that is not sufficient for the students learning at school only. He said that students must learn, and practice at home then only they can completely learn mathematics. Shyam: *“Now at home who must guide the children ? That is the guardians. Thus, I think that the role of guardian is also equally important as a teacher”*. While he described the important role of parents, I posed a question: In the case of your school do you think that students are getting proper parental support then? Shyam said, *“In the case of our school Shaid Smriti, it is a residential type of school. It is a bit different type of school than other types of school that we see in the community. This school was in 2066 B.S. intending to provide education to the children of martyrs, bodiless, disembodied, disabled, the children who are victims of war, and conflict, the children of marginalized groups parents, earthquake victims, etc. Thus, in our school, almost all students do not have their father-mother. So, they lack proper parental care and support”*. He further reflected on the provision of his school that, *now in total 450 students are staying in our school hostel. These students’ parents are not here. So, the hostel warden is performing the duty of parents in our school. Currently, in our school, there are only two hostel wardens, one for boys’ hostel and one for girl’s hostel. Thus, due to this reason we teachers teach at school, but they do not get proper support at home. Hence the performance of students is also low, I think. Parental support is a crucial aspect of factors influencing students’ mathematical studies.* like his thoughts, Acharya (2017) states that parental support is a crucial aspect of factors influencing students' mathematical studies. Parents who actively support their children's learning contribute significantly to enhancing students' academic achievement.

The third participant Hari in the same case said that parents have a great role. He said, *“The role of parents is to guide their children regarding the homework sent by us. If at least parents check the homework regularly, they help their children in doing their homework then definitely I think that it improves the learning of the students”*. Oginni (2018) states that the educational status of parents is closely linked to student's academic achievement, as parents recognize the significance of mathematics themselves. Oginni (2018) further explains they actively assist their children with school assignments and consistently request progress reports to monitor both academic and social development. Hari also adds that *“students remain for only six hours with us after that they spend remaining time with their parents. Thus, there is a significant role of parents in shaping them”*. While he also mentioned the important role of parents, I asked the same question to Hari also, In the case of students at your school do you think that students are getting proper parental support then? He answered, *“In the case of some of our parents they are illiterate themselves. They think that sending their children to school is necessary for life. But they do not have the proper concept of guiding their children”*. If parents are illiterate, then how can they help their children in their learning? He further adds that, *“they tell their children to study but they do not know how to guide them, and children do not learn themselves and hence they are being poor in their studies”*. Hari also discussed the other types of parents. Baliyan et al., (2012) research also shows that the education levels of fathers and mothers indicate a significant influence on students' academic achievement in Mathematics. This suggests that students with educated parents tend to outperform those with less educated parents in Mathematics achievement. Hari further said, *“Other types of parents are busy in their work. They are not giving time to their children. This group of parents are literate, they are intelligent, but they do not give time to their children as required. They lack quality time with their children. Thus, I think that students are getting diverted from their studies and hence the performance is getting down”*. Hari shows the evidence of the busyness of parents and lack of proper parental care for their children by admitting the incident, *“If we call parents to take the result of their children during result publication date, hardly 40% of parents they become present. This shows that parents are not showing an interest in the education of their children. This special care that the children need they're not getting from their parents”* (Hari). He further reports that the students are not getting proper parental care, admitting the present condition of Nepalese society as *“in present situation parents they are compelled to involve themselves in earning for a long time. Due to the poor economic status of Nepalese families, today we can see that in a large number of families father and mother, they are not together with children. Father is always abroad or in*

someone's case, mother is always abroad. So, due to that lack of parental love, support I think its effect is seen in studies" (Hari). Acharya (2017) writes that the economic status of parents is a critical factor influencing students' mathematical studies. It plays a significant role in determining the level of education their children can attain.

The narrative above shows that in the case of the low-performing students they do not get proper support and care from the parents. Due to the lack of care of parents, the absenteeism of students in the classroom increases, and homework and other activities are also less. The children who don't have parents and are staying in a hostel are having less performance due to lack of parental support. The illiterate parents are not able to guide their children in their studies or assist in homework. Similarly, excessively busy parents who are literate are also not guiding their children properly. So, the discussion results that the lack of adequate parental support is the cause of the low performance of students in mathematics.

Frequent Teacher change

During the interview session, all three participants shared that the frequent teacher change is one of the major problems in students' performance. Participants also shared their own experiences of hindering mathematics performance due to frequent changes in teachers during their childhood. The participant Ram said another cause is the frequent change of teachers, I think. When I posed the question, why do you think teacher change is the cause for decreasing the performance of students? He replied, *I also experienced this problem during my childhood. Frequent change in teacher disconnects the bonding of a child with a teacher and rebuilding a connection with a new teacher takes time. The style and rhythm of one teacher don't match with another. The old teacher only knows the ability of a child, which teaching mode affects the child. So, change of teacher is decreasing performance*" (Ram). Suleiman and Hammed (2019) write that the insufficient availability of qualified math teachers, inadequacy of teaching aids, and frequent transfer of math instructors contribute to students' struggles in mathematics.

In the same issue participant Shyam said in his school there is no issue of frequent teacher change but he shared his experience during childhood and addressed there is negative impact of teacher change on students' performance. He remembers the main reason he failed in mathematics in school days was due to frequent changes in teachers. Shyam said, *"In our school mathematics/science teachers used to change every two months. As a result, we could not adapt to the teacher. Teachers also could not identify our label of mathematics. So, the teacher could not give us the knowledge that was intended to give to us. I think due to the frequent teacher change we could not understand what the teacher was teaching, and we failed"*.

The third participant Hari stated that in his school there is no problem with frequent teacher changes, but he also acknowledged the negative impact of teacher change on students' performance. *Such type of problem we don't have in our school. But I also think that it is the major problem"*(Hari).

Regarding the issue of teacher change, I have also experienced that it harms mathematics learning. There was a trend of frequent change in mathematics teachers at the lower secondary level in my school. As an impact, we students were not able to complete the course of mathematics in time and revise it. There was no attachment to the teacher, hence there was hesitation and fear in asking questions to the teacher. I was not able to develop concepts and interest in mathematics, which I think was the one factor for my poor performance in mathematics during the lower secondary level. Like all the participant's observations Aeschlimann et al., (2019) also assert frequent turnover of teachers has a noticeable negative impact on students' academic achievements, to varying degrees.

The narration above shows that the frequent teacher changes in a school cause the breakage of bonding between students and teachers. This causes the feeling of disconnection. Similarly, the new teacher does not know the level of the student and delivers the content. It causes difficulties in learning mathematics and hence the performance in mathematics is low. Similarly, the different teaching styles and rhythms of the teacher may cause disengagement and take a long time to catch up. Thus, the discussion shows that the frequent change of teachers is also one of the major problems of low performance of students in mathematics.

Lack of Practical Learning

In the case of practical learning and using materials in mathematics classroom participant Ram said *"Students are not able to correlate mathematics to real life. Even we teachers sometimes feel difficult to connect mathematics to real life in some topics due to the curriculum"*. Bhattarai (2022) suggests that a discrepancy between the classroom environment and the reality of the outside world creates unfairness within the classroom setting also Gainsburg (2008) says that, frequently school mathematics presents students with inauthentic word problems that fail to demonstrate

the genuine usefulness of mathematics in real-life situations. Ram also accepted that there is conservative learning prevalent in mathematics teaching till now due to which the performance in mathematics is low. *“We need to follow progressive learning. But there is no progressive learning, it is not possible to implement that”* (Ram). Bishara (2015) discusses that students who were taught using the active teaching method experienced significantly greater improvements in their mathematics achievements compared to students taught using the traditional teaching method.

During the interview with Ram, he highlighted the importance of using teaching materials in classroom instruction to connect mathematical concepts with real-life scenarios. He says, *“Utilizing resources not only facilitates better understanding but also contributes to long-lasting learning”*. He believes that incorporating teaching materials increases students' performance and aids in teaching students of varying abilities. However, he recognizes that only on the availability of resources, the possibility of time and money he is using the materials. In my following question, do not you think that due to a lack of teaching materials, there is difficulty in understanding students, and it is decreasing performance? He replied, *“Yes, I feel that. Sometimes I do feel that when there is no availability of some resources if the resources would have been available then students can learn easily”*. In the same issue my second participant Shyam, acknowledges that using materials can significantly aid students' understanding by connecting abstract concepts with real-life contexts. He reveals that their less use of materials in higher classes due to various factors, including the perceived complexity of the topics and the taking course. He says, *“In lower classes, it is easy to use and prepare materials and resources. We can also complete the course easily if we go in such a way. But in the case of higher classes 8 to 10, it is impossible to teach each chapter using materials since it is a bit longer. Being true if I have to say, I've been using materials and teaching resources in lower classes up to class 7, but in higher classes, it's very rare”*. In my same following question, then don't you think that due to a lack of teaching materials, there is difficulty in understanding of students, and it is decreasing performance? He replied *“Yes, I do agree. We need to take the teaching materials in this type of chapter like menstruation. Without the use of teaching materials, I agree that there will be difficulty in understanding students.”* Mutai (2006) also finds that the availability and quality of teaching and learning materials, including textbooks, classrooms, teaching aids (such as chalk, board, ruler, and protractor), stationery, and laboratories, significantly impact the academic performance of learners. Otieno (2010) additionally writes, that academic achievement is greatly influenced by the effective utilization of these materials.

My third participant Hari in the issue of practical learning and use of materials, mentions that there is the frequent use of teaching-learning materials in his classroom. However, he also acknowledges the limitations in providing practical learning experiences to students due to which performance is lacking. Yadar (2007 as cited in Otieno, 2010) argues that no Science or Mathematics course can be deemed comprehensive without incorporating practical work. Connecting the practical work Hari explains his bad experience, *“once I gave one project related to the commission, taxation of bank and financial institutions to the students and said to them from this project work you are going to get practical marks. But what students did, the whole class submitted the same report. It shows that students do not want to learn practically, or they do not want to involve themselves in investigative learning”*. He also attributes the lack of practical learning to the imbalance in the teacher-student ratio in government schools. *“In our school and in other government schools too, I see the major problem is the ratio of teacher and student. There is large student's ratio per teacher in government schools. Due to this, I think that teachers are also not able to teach practically”*. He adds an example, *“For example, when I was giving concept related to land in home arithmetic in class 9; like there is '20 'dhur' in 1 'katha', '16 'anna' in 1 'ropani', I thought that it would be effective if I take students to the fields and involve them in measuring the length and teach practically, but in my school in class nine there are 45 to 50 students. So, we cannot control that large group of students alone. So, I think that due to this reason also teacher escape from teaching practically. So, I think that performance is affected due to this reason also”*. Kharel (2017) expresses the condition of Nepal that, the government has implemented provisions such as contract teachers like Rahat and per capita funding (PCF) in schools with high student numbers that exceed the determined student-teacher ratio. However, due to numerous shortcomings, challenges, and weaknesses, the Rahat program was discontinued. Kharel (2017) further writes when it comes to the practical implementation of teacher management at community schools in Nepal, has not been without its challenges.

The narrative of the participant above shows that mathematics teaching is lacking in practical learning. The course is difficult to connect to the real-life context and hence teachers are not able to focus on practical learning. Similarly, the student's negligence in practical learning and, the large teacher-student ratio in the classroom is some of the causes for no practical learning. The discussion shows that thus the lack of practical learning in mathematics is one of the causes for the low performance in mathematics. Teachers till now they adopt conservative teaching and rely on the chalk-and-talk method. There is also the lack of teaching materials in school which is the cause for the less practical learning of students and low performance in mathematics.

Curriculum and Evaluation System

When discussing the Nepalese curriculum and evaluation system, my first participant Ram acknowledges that the current curriculum design poses challenges in updating the curriculum, which can contribute to decreased student performance. *"We need to update our curriculum time and again. Some parts we cannot deal with practically and make them understandable to students that I have also felt. So, the syllabus must be designed such that the study remains long-lasting, and the performance of students increases"* (Ram). Bhattarai (2022) also points out the need to update the mathematics curriculum to align with societal needs and demands, which is more desirable.

The second participant Shyam expressed satisfaction with the mathematics curriculum, believing it to be manageable for students to understand. However, He acknowledges that when compared to foreign curricula, there may be differences in assessment methods. He states *"In foreign countries we listen there is provision of 50% practical and 50% theoretical, some of the board they conduct open book exam, different perspective of exams but in Nepal only the summative assessment system is here. It means that only a yearly exam system is here. So, this type of provision is somehow thoughtful, but the curriculum in our syllabus is not so difficult"*. My third participant Hari asserted that the syllabus of class 9 is lengthy; he deems the class 10 syllabus acceptable in compulsory mathematics. However, he believes that introducing concepts from higher levels, such as limit and continuity in optional mathematics, into lower classes may be inappropriate and contribute to student difficulties. *"In the case of optional mathematics, the concept of limit and continuity is kept here in the lower level, but I think that it was fine in classes 11 and 12. So, in my perceptions dragging the course from +2 level to the school level is a bit unsuitable"*. (Hari). He also points out issues with the evaluation system, advocating for effective practical assessments and a flexible approach to student evaluation. He believes that the current evaluation system does not effectively gauge students' understanding, contributing to their declining performance in mathematics. He said, *"We can increase practical marks and make practical effective and tight. I think we need to be flexible in way of making our students"*. He further showed the helpless condition in the current practical evaluation system saying that we teachers are bound. *"In the present evaluation system, students do not want to work hard or learn practically, and if we do not give good marks in practical then parents and administration blame us for the poor result. So, trying to find out this win-win situation for all, we teachers are also giving practical marks randomly. Hence, I think that there is a weakness in our evaluation system. Hence, students' performance is being down"* (Hari). Closer to their views Dahal et al., (2019) also assert that relying solely on a three-hour pen-and-paper examination as an assessment tool may not effectively gauge the diverse potentials of students. Further accepting the importance of practical education Bhattarai (2022) also adds summative assessments fail to accurately measure students' learning achievements in mathematics classrooms.

The narrative above shows that in Nepal there is no regular update in the curriculum at first. The next curriculum does not contain practical learning courses. There is less focus on the practical marks. It lacks the appropriate assessment and evaluation methods. The update in curriculum after a decade also made the course unbalanced, bringing the hard topics to the lower level. Thus, the research discussion shows that the updated curriculum and poor evaluation system are also one of the causes of the low performance of students in mathematics.

5. Findings

The findings from the above thematic analysis and interpretation of the research participants for the low performance of secondary-level mathematics students is, that all the Participants highlighted that students exhibit a lack of interest in mathematics due to various factors such as a lack of basic concepts, negative perceptions, and statements by teachers, societal influences prioritizing opportunities abroad over academic pursuits, and traumatic experiences from students' backgrounds. Carelessness in studies, perception of mathematics as a difficult and boring subject, and leniency in educational policies were also identified as contributing factors to students' lack of interest and subsequent low performance in mathematics.

The disruption caused by the COVID-19 pandemic, including the education gap of 1-2 years, the transition to online classes, and excessive use of internet and gadgets during online classes, has led to a significant decline in students'

learning levels and performance in mathematics. All the participants noted that students' engagement in social media and online gaming, as well as the post-COVID impact of internet usage on sleep patterns and concentration, have negatively affected their academic performance.

While acknowledging the importance of parental support in students' academic success, participants highlighted the lack of proper parental care and support as a significant challenge. In cases where parents are absent due to various reasons such as being martyrs, disabled, or working abroad, students lack the necessary guidance and support, impacting their performance in mathematics.

All the participants identified the lack of practical learning experiences and inadequate use of teaching materials in mathematics classrooms as barriers to students' understanding and performance.

Issues with the curriculum design, including challenges in connecting mathematics with real-life applications, and limitations in the evaluation system, such as the dominance of summative assessments and inadequate practical assessments, were also highlighted as contributing factors to students' poor performance in mathematics.

Some other issues like frequent teacher changes, lack of teacher personal development training in private schools were identified as the other issues for the low performance of students in mathematics.

6. Conclusion

Overall, the findings suggest there is a complex interplay of factors contributing to the low performance of secondary-level mathematics students. The issues related to student interest in mathematics, engagement, learning environments, practical learning, parental involvement, guidance, and systemic challenges within the education system are main factors to low performance in students. To address these challenges, comprehensive strategies involving stakeholders such as educators, policymakers, parents, and communities are necessary. Initiatives should focus on nurturing student interest, enhancing parental engagement, improving teaching materials, reforming curriculum and assessment practices, link curriculum with real-life context and make it practical. By adopting holistic approaches tailored to students' diverse needs, we can empower them to succeed in mathematics and beyond. Collaboration among all stakeholders is crucial in creating a supportive learning environment conducive to students' academic growth.

6.1 Implications

The major implication of this study includes educational implications. It is beneficial for teachers and administrators to find out the cause for the low performance of students in mathematics and develop plans and strategies to uplift the level of students in their class. This research is also beneficial for parents who want to improve their children's education.

It assists in determining the challenges in children's mathematics learning. It also helps to find out the obstacles in students' mathematical learning, helps to solve them, and increases their interest in the subject. Finally, it is beneficial for the math educators, learners, researchers, curriculum designers, textbook authors, academics, as well as policymakers of a nation to revise the education policy, and strategy and improve the results of students in mathematics in the nation in secondary level examinations.

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