DIFFICULTIES FACED BY GURUNG STUDENTS IN LEARNING MATHEMATICS

A

THESIS

BY

SANTAMAN NEPALI

IN THE PARTIAL FULLFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF EDUCATION

SUBMITTED TO

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त्रिभुवन विश्वविद्यालय
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LETTER OF CERTIFICATE

This is certify that Mr. Santaman Nepali, a student of academic year 2075/076 with campus Roll no. 63, exam Roll No. 7228384 (2075), Thesis No. 1509 and T.U. Reg. No. 9-2-285-64-2012 has completed his thesis under my supervision for the period prescribed by the rules and regulations of Tribhuvan University, Nepal. The thesis entitled **"Difficulties Faced by Gurung Students in Learnning Mathematics"** embodies the results of his investigation conducted during the period prescribed by the rule of Tribhuvan University, Department of Mathematics Education, I, hereby, recommend and forward that his thesis be submitted for the evaluation as the partial requirements to award the degree of Master of Education.

.....

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Letter of Approval

A

Thesis

By

Santaman Nepali

"Difficulties Faced by Gurung Students in Learning Mathematics" has been approved in partial fulfillments of the requirements for the Degree of Master of Education.

Committee for Viva-Voce **Signature**

1. Prof. Dr. Bed Raj Acharya
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RECOMMENDATION FOR ACCEPTANCE

This is to certify that Mr. Santaman Nepali has completed his M.Ed. thesis entitled **"Difficulties Faced by Gurung Students in Learning Mathematics"** under my supervision during the period prescribed by the rules and regulation of Tribhuvan University, Kirtipur, Kathmandu, Nepal. I recommend and forward his thesis to the Department of Mathematics Education to organize final viva-voce.

March, 2020

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DEDICATION

This Thesis is dedicated to my father **Mr. Gopi Lal Nepali** and mother **Mrs. Dhan Maya Nepali**

Whose love, support and encouragement have enriched my soul and inspired me to

purpose and complete this research.

Declaration

I declare that, to the best of my knowledge, this is authentic except where due acknowledgement is made in the text. It does not include any materials for which any other university degree has been awarded.

……

March, 2020 Santaman Nepali

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March, 2020

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Santaman Nepali

Abstract

The main aim of this study is to explore the difficulties faced by the Gurung students in learning mathematics. The study is a case study design and three community schools of Gorkha district were selected by purposive sampling procedure and five students from these schools are selected as a sample. Classroom observation form, interview guideline with students, parents, mathematics teachers and head teachers and document review were used to collect data. Also, Thematic and triangulation methods were used for data analysis.

On the basis of analysis and interpretation of data, I found that, home and school environment are not similar for the Mathematics learning, Gurung students have their own language; they were from illiterate and low economic family background, parents careless in their children's education, lack of using ICT, teaching materials in the classroom, lack of trained teachers, students do not read and practice at home, lack of discussion and lack of inter-relationship between other caste are the causes of difficulties of Gurung students in learning Mathematics.

Ways to address the causes of difficulties of Gurung students in learning mathematics, the school should provide hostel facilities, scholarship, manage computers, educational teaching materials, take a different test and provide feedback, make rules and applying them. Their parents should be regular visits in the school; their parents should maintain the home environment; should be discussed among students, teachers, and parents about the achievement of mathematics, Mathematics teachers should be focused on student-centered learning.

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Chapter-I

INTRODUCTION

This present study entitled on Difficulties Faced by Gurung Students in Learning Mathematics. This Introduction section includes the background of the study, statement of the problems, objectives of the study, research questions, and justification of the study, delimitation of the study and operational definitions of the key terms.

Background of the Study

The word "Mathematics" comes from the Greek word "Mathema". The meaning is "Inclined to learn" Mathematics was initiated from ancient human civilization such as Babylonian, Egyptian, Roman, Greek, etc. In the early stage of the period, Mathematics was used by vocal counting sound word to know how many members it had and how many decreasing in size the early earliest of keeping a cont way was by a simple tally method employing the principle of one to one corresponding. Gradually, it developed rapidly and related to human life as a language, basic tool of communication, essential solving for daily life problems and essential for studying higher education in the field of mathematics.

"Mathematics is important in every step of life and in science, commerce and even in research for that mathematical knowledge is very essential" (Acharya,2072). According to Oxford Advanced Learners Dictionary, Mathematics is the science of number and space; branches of mathematics include Arithmetic, Algebra, Geometric, and Trigonometry, Mathematics is the study of measurement, properties and the relationships of the quantities and sets, using number and symbols.

Mathematics is one of the most important subjects in schools and out of schools in modern society and it is developed according to the human needs. It is the

result of human activities, societies, cultures and his values. Mathematics is a part of human life. It was created to fulfill human neeeds. Mathematics is closely related with culture, society, caste, ethnicity, environment, religion etc. Culture and Mathematics have a strong relationship. Mathematics is a creation of human activities, cultural practice which is the source of mathematical knowledge. Mathematics is a very essential and important subject in every field and every area. The literal meaning of Mathematics is “things which can be counted” now you can think that counting has a vital role in our daily life; just imagine that there was no Mathematics at all, how it would be possible for us to count members of the family, number of students in the class, rupees in the pocket, runs in a cricket match, days in a week or a months or years? On a basic level, you need to be able to count, add, subtract, multiply, and divide. Mathematics helps the man give exact interpretation to his ideas and conclusions. It is the numerical and calculation part of man’s life and knowledge. It plays a predominant role in our everyday life and it has become an indispensable factor for the progress of our present day world.

Mathematics as a part of Cultural Heritage; Mathematics is one of the greatest cultural and Intellectual achievements of human-kind, and citizens should develop an appreciation and understanding of that achievement, including its aesthetic and even recreational aspects. Mathematics occupies a crucial and unique role in human societies and represents a strategical key in the development of the whole of mankind. The ability to compute, relate to the power of technology and to the ability of social organization, and the geometrical understanding of space time, that is the physical world and its natural patterns, show the role of Mathematics in the development of a Society.

Nepal, with a population of more than 25.8 million people, is a multi-cultural, multi-racial, multi-linguistic and multi-ethnic country (Cultural treasures of Nepal, 2011). Nepal population represents more than a hundred ethnic groups. Each Nepalese Ethnic group carries its own identity and cultural heritage. According to the record of the National Population census 2011, there are 125 caste groups and 123 languages and ten religious groups are one small example. Most of the ethnic groups have their spoken language and script. Their food, dress, ornaments, beliefs, customs, habits and manners differ from one to another. In the context of Nepal, Gurung people are rich in the cultural. Gurung is one of the nationalities of Nepal and it also is an ethnic group.

Introduction of Gurung

The Gurung, who is also known as TAMU, is hill people. As the movement of people from one place to another is a historical pheonomenon, Gurung an ethnic group migrated from Mongolia in the 6th century to the central region of Asia. The word 'Gurung' is pronounced as 'Gu-Rewan'. It signifies people living in and around the mountains and Hills, which matches quite well with their historical background, hence speaks the great significance of the Gurung. Gurung caste is found in the different places of India as well as the different places of Nepal where they have played a renowned role as Gorkha soldiers. "The Gurung has a rich tradition of music, culture and 'Rodhi'. Gurungs are hard working, trustworthy, adaptable and quick learners in meeting the challenges of modern life (Lama T.M. 2018). Their traditional occupation was sheep herding and Trans Himalayan trade. In the 19th and 20th centuries, many Gurungs were recruited into the British and Indian regiments.

Gurung people live primarily in northwest Nepal in Gandaki Zone, specifically Lamjung, Kaski, Mustang, Dolpa, Tanahu, Gorkha, Parbat and Syangjya

and so on the district as well as Manang district around the Annapurna mountain range. According to the 2011 Census, the total population of Gurung is 5,22,641(1.97%) as many as 3,25,622 speak their mother tongue-Tamukwyi. Gurung is a very rich customs and culture. One of their customs is 'Pud-pude, the celebratory receptions of the first-born male child in the family. Similarly, Ghatu, a dance drama performed by virgin girls in the spring, Rodhi, a meeting place where the young stars, supervised by an elderly woman, gather for company and singing and so on. Different mathematical concepts, knowledge, and skills have developed in the Gurung community. Gurung's cultures and society are also the source of Mathematical knowledge.

Statement of the Problems

I have faced various problems in teaching and learning mathematics. Looking back to the past results, the achievement of mathematics is very poor all over Nepal and also Gurung students had been getting a weak result.

In my own experience of one year of teaching at Shree Kalratri secondary school, Gorkha. In this school, I faced many problems in the course of teaching mathematics. The past result of SLC/SEE was very low; students' understanding level was very low. The SLC/SEE results of this school also shows that most of the unsuccessful Gurung students have failed in mathematical subject and hence shows that there is the low achievement of Gurung students in learning mathematics in this region.

Table-1: Achievements of Gurung Students in Different Schools in S.E.E.

Year (B.S)	Shree Kalratri Secondary School		Shree Prabhat Kiran Secondary School		Shree Suryadaya Secondary School	
	No. of Gurung Students	Gurung Students Passed %	No. of Gurung Students	Gurung Students Passed %	No. of Gurung Students	Gurung Students Passed %
2073	9	3.84 %	6	11.11 %	8	7.69 %
2074	6	8.6 %	4	13.33 %	5	11.11%
2075	11	14.28 %	9	8.33 %	7	21.42 %

(*Source: S.E.E. Examination Statistics (B.S. 2073-075). Shree Kalratri S. School, Shree Prabhat Kiran S. School, Shree Suryadya S. School.)*

Table 1 states that all of three school's (Shree Kalratri Secondary School, Shree Prabhat Kiran Secondary School, & Shree Suryodaya Secondary School.) result of three year of mathematics was very poor. My study is focused to answer the following questions.

- Why Gurung students feel difficulty in learning mathematics?
- What are the causes of difficulties in learning mathematics of Gurung students?
- What are the ways to minimize the difficulties in learning mathematics?

Objective of the Study

The main objectives of this study were to investigate the causes of difficulties faced by Gurung students in learning Mathematics at Grade -X. Based on the research questions mentioned above, this study aims to fulfil the following objectives:

- To explore the difficulties faced by the Gurung students in learning mathematics.
- To analyze the causes of difficulties faced by Gurung students in

learning mathematics.

- To explore ways to minimize the difficulties in learning mathematics.

Justification of the Study

According to the National Population Census (2011), it confirmed that there are 125 different castes and ethnics groups and 123 mother tongues as a national language. We know that the medium of instruction is the Nepali language in schools. However, Gurung children speak own language which is called mother tongue those children difficult to learn mathematics. Every research has own importances because it gives detail information in any field of study. Most of the Gurung students are weak in mathematics. This research is significant as it explores the factors, which contribute to the problems faced by Gurung students in learning mathematics. This study will help to the related schools to reduce the failure in mathematics among Gurung students.

The Justification of this study is:

- It could helps the teachers to know about the difficulties faced by students in learning mathematics.
- It would helps the parents of students to manage the appropriate home study environment.
- It could helps the teachers to improve and selecting the teaching strategies.
- It would helps teacher, policymakers and other related persons and agencies to improve the achievement of Gurung students in learning mathematics.
- It would helps to encourage and motivate the participation of Gurung students in learning mathematics.

- It helps to identify, diagnose minimize and the difficulties in learning mathematics in secondary level.

Delimitation of the Study

The following were the limitation of this study:

- The study was delimited to only three community schools of Dharche rural municipality of the Gorkha district.
- The study was conducted only in Grade – X.
- This study is delimited to only five students of class –X of Government Schools.

Definition of Key Terms

The main key terms and words and their definitions are given as below:

Difficulties: Students who feel difficulty (communication, interaction pattern, & behavior, participation) in the learning of Mathematics at the secondary level.

Gurung: The Gurung People are also called Tamu, are an ethnic group from different parts of Nepal. Gurung refers to those students who are studying in Grade-X at Dharche rural municipality.

Participants: Involvement of students in the learning of Mathematics of Grade-X students.

Students: Students refer to Gurung students who are studying Grade-X.

Parents: Parents mean father, mother, brother, sister and other related people of Gurung students who are studying in three secondary schools of Dharche rural municipality.

Chapter- II

REVIEW OF RELATED LITERATURE

A literature review means locating and summarizing studies about a topic. It is a compact written summary of journal, articles, books and other documents that portray the past and current state of information on the research topic which is going to be studied (Creswell, 2014). The literature review helps to construct the framework to achieve the objectives of this study and help the researcher to limit their research question and to clarify and define the concepts of the study. Also, it helps the researcher to find out the gaps in knowledge and avoids unintentional replications of previous studies. In this chapter, I reviewed the literature as the empirical, theoretical framework and conceptual framework as below.

Review of Empirical Literature

Kaphle (2010) conducted a search entitled "Problem Faced by Tharu children in Mathematics Classroom at Lower Secondary Level". This study based on a descriptive survey design. The objectives of the study were to, identify and analyze the problem faced by Tharu Children at the Lower secondary level. This research is both qualitative and quantitative. Ten schools were selected as sample of study. Classroom observation form and questionnaire to students were used to collect data. On the basis of reviewed literature and different concept of theories (Cultural difference, discontinuity and constructivism) were developed as indicators to analyze problems of the study. The main finding of the study showed that there are cultural differences and discontinuity at school and home.

Yadav (2017) conducted a study on " Difficulties Faced by Dalit Students in Learning Mathematics." This study is based on the qualitative design with a case study approach. The researcher selected three schools of Nawalparasi district, from

where 5 Dalit students were sampled (2 boys & 3 girls). A classroom observation form and interview guideline to students, subject teachers, parents were used to collect data. Also unstructured interviews of selected students, teachers and parents were taken to analyze difficulties. The main finding of this study showed that learning environment at home and school, language, interpersonal relation, teacher-student interaction, gender discrimination, poverty, irregularity, lack of parental involvement in the school, lack of beliefs and supports and teaching method have emerged as the major causes behind the difficulties in learning mathematics for Dalit students.

Ghimire (2013) conducted a study on "Difficulties of Bhote Students in Learning Mathematics." This study is based on a descriptive survey design. The objectives of this study were to find the difficulties of Bhote students in learning mathematics at the lower secondary level. This research is qualitative in nature. This study is conducted with the size of four Bhote students of Grade seven. Face to face to interview with students, parents, mathematics teacher, head teacher and the observation is taken. Such collected data is analyzed by using thematic categorization and interpreted. The main findings of this were cultural differences and discontinuity at school and at home. There is a discontinuity in language, poor relationship with an entire teacher, low participation in classroom discussion and poor interaction with the teachers.

Panta (2007) did research on "A study of Learning Difficulties in Mathematics among Grade-V Students in the Kathmandu Valley of Nepal " did a study in a government and a private school. He took students, teachers and parents of the selected schools and found the school related factor (quality of school program, quality of teacher, time allotment), class specific factors (quality of instruction, time for learning, opportunity of learning, relation with students), home related factors

(parental help, support), social factors (home culture and school culture difference, language of school and home), Parental factors (time for learning and motivation) are the main factors which influence learning mathematics.

Lange T. (2009) in his doctoral dissertation entitled "Difficulties, Meaning and Marginalisation in Mathematics Learning as Seen through Children's Eyes". This thesis is focused on children's perspectives on learning difficulties in Mathematics. The aim is to give voice to an exposed group of children by exploring their stories about their experiences with Mathematics to understand these stories in a larger socio-political context. The study adopted a narrative approach within a socio-political perspective. The research question was addressed by a series of life world interviews with 10/11-year-old school children and extended observation of their mathematics classes. The papers illustrate that children make sense of their lived experiences with mathematics teaching in a comprehensive way and from a whole life perspective. This study showed that understand how the individual is enfolded within the society in the case of children in difficulties in learning mathematics.

Dhital (2016) did a search entitled "Learning Difficulties of Students in Secondary School mathematics". This study is a quantitative (Survey) in nature. The objective of this study is that to find out the relationships between actual learning difficulties and perceived learning difficulties at secondary level students. In this study, the six secondary schools of Rautahat districts comprising a total of 240 students were selected for the sample of the study, Survey design was adopted for carrying out. The finding of the study is that the achievement of boy students is better than that of girl students.

Gurung (2017) did research entitled "Low Achievement in Mathematics of Chepang Students". The main objective of this study is to find out the causes of Low

Achievement in mathematics subjects of Chepang Students in grade five. This is a case study of Chepang students which is qualitative in nature. All of the Chepang students including three boys and one girl from grade five and two parents were selected. Interview, classroom observation, and written documents were the main tools of this research. This study showed that there are different causes of low achievement in mathematics subjects of Chepang students such as social context, peer, family, culture, self-efficiency, practices, expectation, attitude, and thought which belong to environmental, behavior and cognitive factor.

Paudel (2011) has conducted a research entitled "Problem Faced by Mathematics Teacher in Teaching Mathematics at Secondary Level of Kailali District". The purpose of this study is to identify the problems faced by Mathematics teachers in teaching mathematics at the secondary level and also to find the causes of the problems which were faced by Mathematics teachers in teaching mathematics at the secondary level of Kailali District. The descriptive survey research design was adopted to conduct the study. The researcher prepared tools; questionnaires, class observation forms, and interview schedules. Fifteen secondary Schools of Kailali District were selected. In this study, the researcher found that there is a myriad of problems that cause teachers inefficient and unenthusiastic to execute their duties properly in the classroom. Most of the problem faced by them were due to the lack of moral education, economical crises of school, lack of classroom management, lack of motivation, lack of encouragement, lack of appropriate teaching method and materials, lack of teacher trainings, lack of supervisory helps, lack of facility, large class size, workload and lack of proper evaluation techniques for students achievement.

Research Gaps

From the above discussion of related empirical literature, very few studies have been searched out around the Gurung Community. Some studies have been focused on ethnic groups such as the Tamang community, Tharu Community, Dalit, Chepang community and so on but very few studies have been focused on the ethnic group like Gurung community. Among these studies, some were directly related to other ethnic groups/castes where the problem faced by students in learning Mathematics. Especially, this study tried to find out the problem faced by Gurung Student in learning Mathematics. Any related research did not try to investigate the problem faced by Gurung students in learning Mathematics. Therefore, I had to investigate this area.

Theoretical Framework

Lev Vygotsky's Social Constructivism Theory

This research problem is tried to describe on basis of Lev Vygotsky social constructivism theory and Socio-cultural theory. Social constructivism states that students work together to construct artefacts. While social constructivism focuses on the artefacts that are created through the social interaction of a group, social constructivism that focuses on an individual's learning that takes place because of his/her interaction in a group. An instruction strategy grounded in social constructivism that is an area of active research is computer supported collaborative learning. This strategy gives students'opportunity to practice 21st century skills in communication, knowledge sharing, critical thinking and use of relevant technologies found in the workplace. Additionally, studies on increasing the use of student discussion in the classroom both support and are grounded in theories of social constructivism. There is full ranged of advantages that result from the implementation

of discussion in the classroom. Participating in group discussion allows students to generalize and transfer their knowledge of classroom learning and builds a strong foundation for communicating ideas orally. "The constructivist classroom presents the learners with opportunities to build on prior knowledge and understanding to construct new knowledge and understanding from experience. Learners are allowed to deal with problems and they find meanings in them because of their real life context" (Acharya, 2017).

This study is based on Vygotsky's social constructivism theory because it focuses on social activities, knowledge is constructed by the learner, and knowledge is constructed in a society with social interaction. Social interaction plays a vital role in the process of cognitive development. Vygotsky states that every function in the child's cultural development appears twice; first on the social level and later, on the individual level. According to Vygotsky (1978), social interaction is importants; culture is important; self-regulation is developed through internalization of action and mental operations that occur in social interaction, language is most critical tool; the Zone of proximal development (ZPD) is the difference between what children can do on their own and what they can do with assistance from others. Interaction with adults and peers in the ZPD promote cognitive development. The student is seen as a naturally active learners who construct new personalized knowledge by linking previous knowledge with new knowledge. Authentic knowledge provides the content for the instructional process, which involves an interactive and collaborative dialogue between the teacher and the student. The teachers approach is the instruction within the student's zone of proximal development by providing assistance when required. Thus, there is an emphasis on real problems based on the student's interests, motivations, and self-initiated solutions.

This theory emphasized that the teacher and a student are seen as active agents in children learning. The teacher's intervention in children's learning is necessary; but it is the quality of the teacher-learner interaction, which is seen as crucial in learning. Also, it focuses on reciprocal teaching; reciprocal teaching involves an interactive dialogue between a teacher and a small group of students. This theory focuses on peer collaboration; the shared social interactions when peers work on tasks cooperatively to serve an instruction function. Also, it focuses on apprenticeship programs: as they occur in cultural institutions like schools and agencies which help in transforming learners of cognitive development. The role of social and cultural interaction plays in the learning process. Vygotsky's theory states that knowledge is co-constructed and individuals learn from one another. This theory shows that students learn from each other. According to this theory, students can be grouped such that the students who understand the content work with the students who do not.

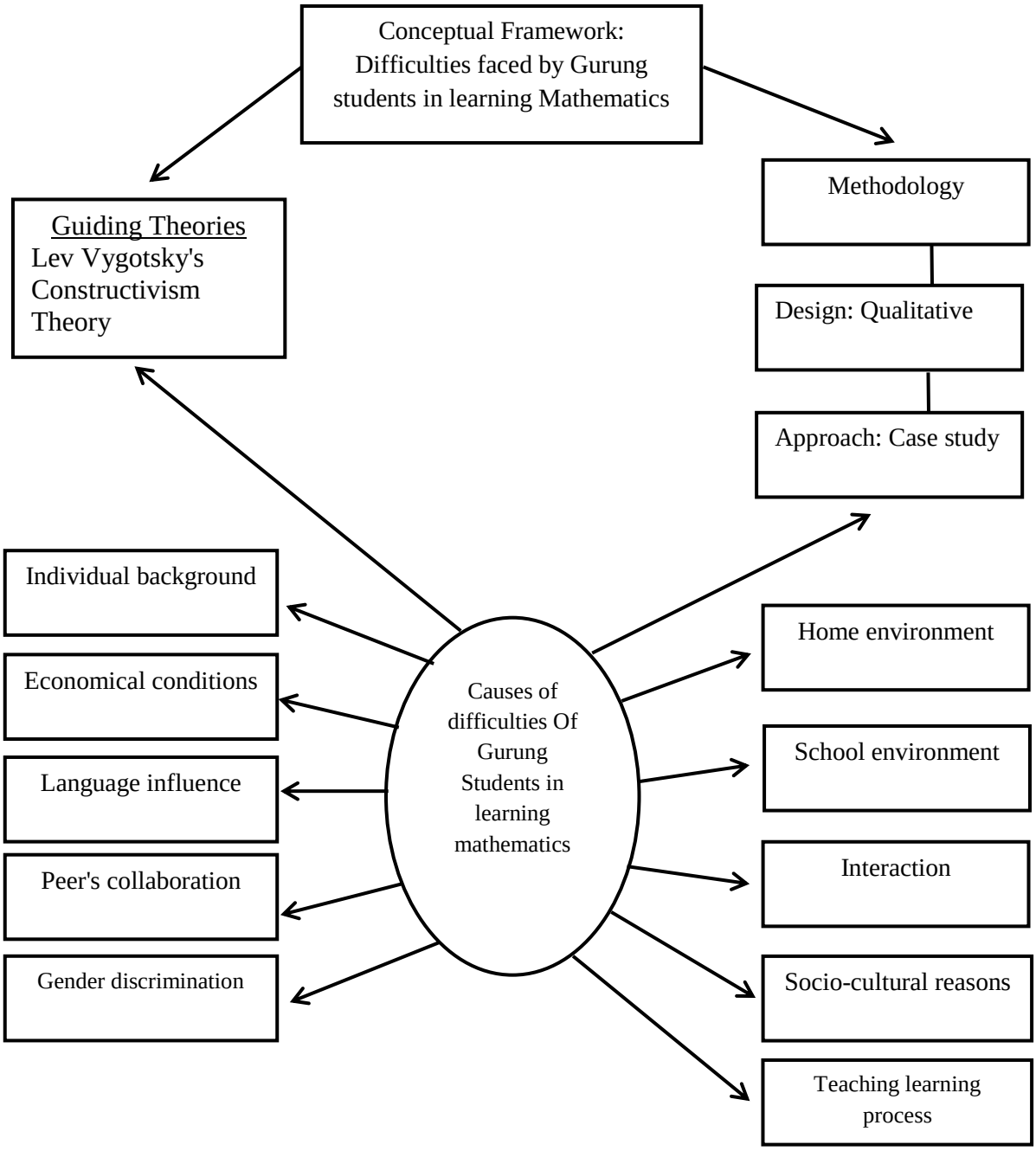
According to the constructivism theory, the curriculum of mathematics should be child-centred, based on real-life, learning as a social activity, culture is important, collaboration among learners, teacher as a facilitator and so on.

Conceptual Framework

Based on theoretical framework, difficulties faced by Gurung students in learning mathematics at secondary level can be described as the different reasons such as individual reasons, home environment, economic conditions, school environment, Language influence, Interaction, peer's collaboration, social environment, gender discrimination, socio-cultural reasons, teaching-learning process and so on. The case study is related to finding the difficulties in learning mathematics at the secondary level. This below figure showed that it is qualitative design in case study approach. Purposive sampling procedure is adopted to collect the data. Observation, in-depth

interview and written document, student's biography is taken for the research tools. Vygotsky's social constructivism theory is interlinked to justify the user data in this study. The conceptual framework of this study is shown below in the following reasons:

Figure: Conceptual Framework of the Study



Chapter -III

METHODS AND PROCEDURES

Research methodology is a way to systematically solve the research problem. It may be understood as a science of studying how research is done scientifically (Kothari, 1990). Research methodology refers to the philosophical and intellectual framework about how to collect the data for the basis of our research study that guides us to conduct the research study. It describes the design of the study, population, and sample, data collection tools, reliability and validity of tools, data collection procedure, data analysis procedure, etc.

Research Design

This is a qualitative research. In this research, I had used a case study design to conduct the study. This study is based on the interview schedule, classroom observation and observation of the home environment and written documents of Class-X students**.**

Case Study

A case study is a comprehensive study of a social unit, a person, a group, a social institution, a district or a community (Young, 1998). Case studies are bounded by time and activity, and the researchers collect detailed information using a variety of data collection procedures over a sustained period of time. In the case study, data were analyzed through the description of the case and themes of the case as well as cross-case themes (Acharya, 2017). Related persons can know about the Gurung caste and his/her religion, occupations, educational condition, culture, language, etc. In this study, is studied individually the causes of difficulties of Gurung students in learning Mathematics. With the help of some selected students, I studied deeply about these

students and analyzed the data. In this study, I have tried to find out the causes of Gurung students who faced difficulties in learning mathematics.

Study Site

My study site was the Gorkha district named Lapu, Gumda and Lapu besi of Dharche rural municipality. In this area, most of the people are Gurung rather than other castes. To collect the appropriate required data it is a very important task for the researcher. Therefore, I selected three schools, such as Shree Kalratri Secondary School in Lapu Gorkha, and Shree Surya daya Secondary School, Gumda Gorkha and Shree Prabhat Kiran Secondary School, Lapu Besi Gorkha.

Respondents of the Study

Firstly, I selected three schools that are situated in the Darche Rural Municipality of the Gorkha district. These three schools are located in the Gorkha district. In these schools, most of the students are Gurung caste rather than other castes. Before selecting the students (Respondents) I discussed with principal of the school. Then, according to the permission of the principal, I observed the classes of respondents and their everyday life. I selected five students, their parents, principal of these related schools. The total sample size of this research was nearly 15 students through the purposive non-random sampling procedure.

Research Tools for Data Collection

I have used different tools for collecting the data. For the collection of the primary source of data, interview schedule, participant observations, observation form, document analysis were used. I also collected secondary data from journals, articles, books and other published and unpublished documents. In this study, I used the following research tools.

Observation

Observation is the crucial data collection tool for the data collection of qualitative research. Under the observation method, the information is sought by way of the investigator's own direct observation without asking the respondents (Kothari, 1990). I always met Gurung students continuously and their parents. Especially, I observed the selected respondents, their behaviors, activities, rules, involvement in society. For this, I have used field notes which can be served as data collection. From the observation of my research's respondents, I have investigated the causes of difficulties of Gurung students in learning mathematics at the secondary level. Also, I have observed the family background of students, their daily life, cultural background, and customs, and environment, professional and economical condition.

Interview Schedule

The interview schedule developed on the basis of accomplishing the objectives of this study. Those items have constructed on the recommendation of the experts and supervisor. It is the data collection tool where the researcher and respondents will interact face to face or from the telephone. For this, my interview schedule consists of a direct question from people about their opinions, feelings, experience, and knowledge. Firstly, I met informally to the respondents then after discussing the respondents, I asked the questions. Also, I took an interview with their parents. Similarly, after visiting the mathematics classroom, I took an interview with the mathematics teacher. Finally, I asked some questions to the principal about the Gurung students and their Mathematics learning.

Document Review

In this study, I reviewed some documents which are closely related to respondent students such as attendance register, student's result sheet, student's marks sheet, teacher's profile, files of schools and others, etc.

Data Collection Procedure

Firstly, I went to the school and talk to the principal about my purpose. Then I observed the school's register and achievement report. Subsequently selected two Gurung students from two secondary levels of school and one student from another secondary school. Then I observed the Mathematics classroom for two weeks continuously. Also, I visited six/seven days of their home, in their home I took interview to their parents. From the interview, I took parents' views, their children expectation and why they faced difficulties in learning Mathematics. In my study, I included an in-depth interview with the respondent, his/her parents, and the teacher. From this, I identified the difficulties faced by Gurung students at the secondary level. All the information collected in my filed note.

Data Analysis Procedure

After gathering the information with the help of data collection tools such as observation, interview, and document review. Firstly, I organized all of the information and categorized the data in different heading and sub-heading; I gave coding and de-coding of these data also. Then I identifed the real problem faced in learning mathematics through the interview, observation and document review. The individuals' reason, home environment, school environment, family background, socio-cultural background, economic condition and so on been interpret from the students, his/her parents, and teachers with the help of interview, observation, and document review. The collected information from the observation, interview and document review, I categorized the data and using thematic and triangulation methods of data analysis.

Finally, I did interpret and analyze the data with the help of Vygotsky's social constructivism theory and literature described in the literature review section.

CHAPTER -IV

ANALYSIS AND INTERPRETATION OF DATA

This chapter deals with the analysis and interpretation of the data collected from the case study of related respondents, observation of Mathematics classroom, interview with the Head teacher and mathematics teacher and parents of the respondents. This was a qualitative study. The main focus of this study was to find the causes of learning difficulties of Gurung students in mathematics at school level grade-X. For meeting the objectives of the study, data was collected from three schools Shree Kalratri Secondary school, Shree Suryodaya secondary school and Shree Prabhat Kiran secondary school, Gorkha. The researcher minutely studied the school documents such as mark ledger, and attendance as well as the other activities of Gurung students.

Observation Appendix-A form of participation in class, the observation form filled by the researcher from the mathematics classroom, Appendix-B emphasized interview taken from the key respondents, Appendix-C form of mathematics teacher and Appendix-D of the principal and Appendix-E of the parents of key respondents. The descriptive method is mainly used in this research. The researcher attempted to calculate the study by describing and analyzing the information acquired in the research process. The chapter includes the analysis and interpretation of the collected information. Data were categorized according to the framework category of the samples and different themes were given in the text view or the field note.

Thus the obtained data and information were analyzed and interpreted in their perspectives under the following headlines: Study of case students, the participation of Gurung students in School, learning environment of Gurung students at home, learning environment of Gurung students at Schools.

This chapter divided into three sections: the first section I described the difficulties faced by Gurung students, the second section was described the causes of difficulties in learning mathematics of Gurung Students and the third section I ported the ways to minimize the difficulties of learning mathematics.

Difficulties Faced by Gurung Students

The respondent were Gurung students from the Gorkha district. These students had a low achiever in mathematics among grade-X. The brief description of the key students were presented below:

Respondent 1

Respondent 1, was twenty years old boy studying in grade-X. He lived in Dharche Rural Municipality-7, Lapu, Gorkha. The distance of school takes ten-minute trips from his house. He has five members in his family. He has a poor economic condition. To go to school, he has to finish all his household works. He even goes to the 'Goath' in the morning for caring for the cows and buffalos. Because of the poor economic condition, he reaches school quite late some days. He becomes usually absent in the school. His father and mother could not gain any formal education i.e. illiterate. His father was a farmer and mother was a housewife. He was married and he has a one-child of one year. His mother tongue was Gurung language. The researcher once talked to him about the learning difficulties, he felt in mathematics. The researcher asked him "how your cultural environment affects study?" He told the effects of our culture in my study, we must have participated in our socio-cultural activities. According to participant 1, there is no proper learning environment at home and the school's learning environment is not good. During the observation in his home, the Gurung students had different home culture. He always used own mother tongue i.e. Gurung language at home. He never used the Nepali language at home. He

could not ask the questions to mathematics teacher although he did not understand. The researcher asked him. He told me that I felt a more difficult mathematics subject because mathematics is something to remember more about, it is difficult to solve linguistic problems, it must be practiced more and the teacher did not focus on understanding. The researcher also asked his mathematics teacher. The teacher told me that he got more difficult in learning mathematics almost all topics except set, statistics.

Respondent 2

Respondent 2 was a 17 years old girl studying in class-X. She was born at Dhareche R.M.-6, Khani Gaun, Lapu Gorkha. She has six family members in her family. In her family, she is the elder child of their parents. When I observed her family background, I found that her family economic condition to be very poor. I found that she always engaged in household work and other work. She did not have enough time to do mathematics practices at home. Her father was a house maker and mother was a housewife. She speaks Gurung language at home, she rarely used the Nepali language at home.

She was interested in playing volleyball. She said, "I felt difficulty while reading mathematics." She does homework sometimes but she attends the class regularly. She said, " Mathematical classroom is not regular, the school's environment is not so good. She also said, " The teacher writes the problem on the whiteboard and solved it. All of the students were busy to copy the solution from the board. The teacher did not explain it step by step, and the teacher did not use any educational materials, audio/visual materials of related topics."

According to the respondent, 2 mathematics is a difficult subject because the mathematical problem could not be solve, its more practicable subject, formulae must

be remembered, without remembering the formulae we can not solve the mathematical problem. She did not ask the question to the teacher and did not collaborate with peers about mathematical problems. Also, she said, "Gurung students feel mathematics as a difficult subject due to the various reasons such as lack of tuition opportunity, poor economical condition, socio-cultural background, lack of educated people at home, lack of good mathematics teacher, changing the problem of a mathematics teacher and so on."

Respondent 3

Respondent 3 was seventeen years old boy studying in grade-X. He lives in Dharche R.M.-7, lapubesi, Gorkha. He lives with five members of his family. His economic condition was very poor. When I visited his house I found it in very poor condition. I asked his parents about the family background and his life in his house. Their occupation was farmer, poultry breeding, etc. His mother was a housewife. Due to his household work, he did not get more time to study at home. His plan was to be Laure. His home is suitable for reading mathematics but he did not read the mathematics. According to the respondent, socio-cultural environments like Jatra, Ghatu Nach, Chhewor effects in our study.

He always used Gurung language at home. He rarely used the Nepali language at home. He could not ask the question to mathematics teacher although he did not understand. I asked him. He told me that I felt a more difficult mathematics subject because mathematics is something to remember more about. He said, " The teacher wrote the problem on the whiteboard and solved it. The teacher did not explain clearly and the teacher did not provide any educational materials such as audio/visual materials of related topics." When I observed and asked about his study, his teacher told him that he was poor in mathematics also all Gurung students are poor in

mathematics. He felt difficulty in equations, Algebra, words problem, taking L.C.M, Geometry, etc.

Respondent 4

Respondent 4 was an 18 years old girl studying in class-X. She was born at Dhareche R.M.-6, Lapubesi Gorkha. She has four family members in her family. Her father was a farmer and businessman. Her mother was a housewife. When I observed her family background, I found that their family's economical condition was good. I found that she engaged herself in household works sometimes. She got the opportunity to learn mathematics practices at home. She speaks Gurung language at home, she rarely used the Nepali language at home. Her learning environment was good at home but she did not spend more time in study. Her father and mother were illiterate so she lacks the awareness to teach her children.

I also found that she regularly participated in extracurricular activities in the school and she won the prize also. She was regular in taking the class. However, sometimes, she missed the class because of her household works and she missed the classroom because she went to Jatra, Chhewor. Sometimes, she did not complete her homework because she did not have enough time to do homework.

Respondent 5

Respondent 5 was twenty years old girl. One of the Gurung students of class-X. She was one of the top fifteen students of class-X. She had seven family members. His father did labor work mother was a housewife. She used Gurung language and sometimes used the Nepali language at home. She asked the questions to Mathematics teacher although he did not understand. I asked him. She told me that I felt a more difficult subject is mathematics. Her family was an illiterate family but her elder brother is studying diploma engineering. She had a headache problem. So she could

not study mathematics. According to respondent 5, mathematics is a difficult subject because in this subject we must be remembered formulae, more time we must be spent to practice in mathematics. Without practice, there is no possibility to pass mathematics.

I asked mathematics teacher about her and he told that she felt difficulty in almost all topics of mathematics. The main problem of Gurung students is the language problem.

Causes of Difficulties in Learning Mathematics of Gurung Students

Participation of Students in Learning Mathematics at School

In this research participation means regularity, the interaction between teacher and students, doing homework and classwork of the Gurung students. Regularity in the classwork is one aspect of participation. The following table shows the rate of participation in the month of Gurung students:

Table 4.1: Attendance of Gurung students in the month of Paush.

Name of the Schools	Attendance of Gurung studence
Shree Kalratri Secondary School	56%
Shree Suryadaya Secondary School	49%
Shree Prabhat Kiran Secondary School	45%

In these schools, there were altogether 105 students at grade-X. There were different caste group (Gurung, Brahaman, Sunar, Pariyar) students and among them, most of the students were Gurung. According to the school the total Gurung students were 43 (20 boys & 23 girls) Gurung students in grade-X. Table 4.1 shows that the

average attendance of Gurung students is only 50 %. It indicates that the regularity of Gurung students in the school was very low.

Gurung students' of this school are especially from poor and uneducated family background. Gurung students are mostly busy in own cultural activities like Jatra, Argung, chewor, etc. To make responsible for the school management committee includes the member of Gurung communities. We usually inform the parents for discussion about their children's education and regularity in school but they did not participate in all of them, they did not care about their children for the study (Head teacher's view).

Our parents are illiterate. They couldn't read and write. Our parents couldn't suggest us to read and going to school. So our parents cannot encourage going to school (Students' view).

The above-mentioned view indicates that parents are not responsible for their children's education because most of the parents are uneducated and they are busy with the own work, they are mostly busy with cultural activities and other activities.

Interaction. Interaction with teacher and other caste students is another aspect of participation in learning mathematics to observe these activities the researcher noted the following episode.

Episode

There are 24 students in the class, among them, 9 students were Gurung students. A teacher took the attendance of the students. There are 21 students present on that day and only 7 Gurung students were present on that day. Usually, the teacher asked students to open the textbook and asked the question to the students, did you finish the homework/problem given yesterday? If the teacher did get the answer yes he went to another exercise if no teacher opened the book again and wrote the topic

prism and pyramid. He wrote a problem on the white board and solved it. All the students were busy to copy the solution from the board. The teacher did not review the previous class and also did not check the homework. After some time the teacher asked the students do you understood or no? Some of the students said yes sir but others were silent. The students discussed each other but the teacher did not care about them. Then he gave the question for them and checked the solution of some students only but did not visit around all students. Then the class is finished.

There was no proper interaction between Gurung students and teachers. So the teacher's understanding and the relation of the multicultural issue are the most impact issues in the multicultural classroom.

When teachers form positive bonds with students, classrooms become supportive spaces in which students can engage in academically and socially productive ways. Positive teacher-student relationships are classified as having the presence of closeness, warmth, and positivity. Students who have positive relationships with their teachers use them as a secure base from which they can explore the classroom and school setting both academically and socially, to take on academic challenges and work on social-emotional development. This includes relationships with peers, and developing self-esteem and self-concept. Through this secure relationship, students learn about socially appropriate behaviors as well as academic expectations and how to achieve these expectations (Hamre & Pianta, 2001).

Students in low-income schools can especially benefit from positive relationships with teachers. Students in high-poverty urban schools may benefit from positive teacher-student relationships even more than students in high-income schools, because of the risks associated with poverty. Risk outcomes associated with

poverty include high rates of high school dropout, lower rates of college applications, low self-efficacy, and low self-confidence. Several factors can protect against the negative outcomes often associated with low-income schooling, one of which is a positive and supportive relationship with an adult, most often a teacher. Low-income students who have strong teacher-student relationships have higher academic achievement and have more positive social-emotional adjustment than their peers who do not have a positive relationship with a teacher (Murray & Malmgren, 2005).

The above view indicates that the interaction between teachers and students was not good. Interaction between teacher and students was one of the causes of learning difficulties of Gurung students in mathematics.

Homework and Classwork. Homework and classwork is another aspect of participation in learning mathematics. Homework is an assignment given to students to complete outside the regular class period and classwork is the part of a student's work that is done. The following table shows the participation in homework and classwork of Gurung students:

Table 4.2: Participation in homework and classwork

Name of the schools	Percentage of participation in homework and classwork of Gurung students	
	Homework	Classwork
Shree Kalratri Secondary School	35%	50%
Shree Suryadaya Secondary School	30%	40%
Shree Prabhat kiran Secondary School	25%	35%

Table 4.2 shows that the average percentage of participation in the homework of Gurung students is only 30 % and participation in the classwork of Gurung students is only 41.6 %.

It indicates that participation of Gurung students in homework and classwork is very low. The participation of Gurung students in homework and classwork was affected by various factors such as literacy of parents, home environment and school environment.

Paschal, Weinstein, & Walberg (1984) discovered through a meta-analysis of fifteen quantitative studies that homework had a positive effect on achievement, especially in certain grade levels. Specifically, traditional, daily, and graded homework had the greatest positive impact on student achievement.

Homework appears to provide more academic benefits to secondary level students, for whom the benefits seem to lie in non-academic realms, such as in improving study skills and learning structure and responsibility. It shows that low participation of homework and classwork is one of the causes of the learning difficulties of Gurung students in mathematics.

Learning Environments of Gurung Students at Home

The environment is the totality of the educational atmosphere at home and school. Home is regarded as the first school for all individuals. They learn how to behave, how to respect elders, how to cooperate. In this research, the home environment reflects the occupation, economic condition, educational background of the family and learning opportunity of the students at home. The home environment plays a vital role in learning. School is the second home of any child. The teachers, students, head teacher, friends, and parents are the component of the school.

Occupation of parents. Occupation of the parents is one of the aspects of the learning environment at home. Occupation means that which occupies or engages the time and attention. The following table shows the occupational details of parents of Gurung students:

Table 4.3: The occupational details of parents are as follows:

Occupation	**Involvement**
Agriculture	70%
Labor	15%
Business	3%
Others	12%

Table 4.3 shows that most of the Gurung students were from the low economic family background. Only a few students were from medium class. Approximately 30% of Gurung students completed their homework at home. None of the students took the tuition class of mathematics for improving their results.

We do not have basic things in our house. Nobody is in the family to earn money. We are in a difficult situation to survive. How can we send the children to school? (Parents View).

Our family income depends upon agriculture and labour which is not sufficient for us it is difficult to manage the daily expenditure of home. We do not have a tuition class to improve mathematics (Students View).

Gurung students used informal language in his/her family not standard vocabulary but in school informal language was not suitable, the standard vocabularies were used.

According to Ogbu, it is the cultural difference and cultural discontinuity between home and school in every home culture which was discontinued in the school culture and forwarded culture. The home environment was affected by the everyday life of all individuals.

Educational background of the family. Educational background of the family is another aspect of the learning environment at home. The following table shows the educational background of the parents of Gurung students:

Table 4.4: Educational background of the family

Education	Percentage
Bachelor or above	5%
Intermediate or 10+2	5%
S.L.C.	10%
Literate	20%
Illiterate	60%

The data and view indicate that most of the Gurung students were from uneducated families and low economical backgrounds, and they have not given sufficient time at home for mathematics learning and doing homework and other practices. Gurung students were not expected to achieve in Mathematics. The parents do not guide them in house and always avoid taking responsibility to provide an educational environment at the home. The above data also show Gurung students did not do homework regularly in Mathematics, due to lack of sufficient time at home for mathematics practice, not having a separate room to read and lack of guidance of parents, so they became weak in mathematics. Indeed mathematics needs more practice to achieve good marks but they did not give enough time for practice and they did not take the tuition classes because they have no enough money.

Learning Environments of Gurung Students at School

School is the second home of any child. The teachers, students, and parents are the component of the school. The school environment reflects the belief and tradition

of the school community delineating the relationships among parents, students, and teachers. Scholarship to the students, the extra class provided, appropriate teaching method and equal chance for boys and girls in all activities are the major aspects of the school environment. (KC, 2009)

All the activities which are conducted in the school came within the school environment. It is one of the components of the total educational atmosphere. However, school is considered the second home of any child where the teachers, students, and other staff play a role of like the family members. Teachers' guide control and provide information about the books and the current time. The schools have to maintain the rule and regulations of the school period. No matter how the school environment, it has a deep relation with society. The social environment becomes adverse to the school environment. If the social environment maintains the educational environment in society, the school environment becomes good for students to learn about the current knowledge.

The school has not enough teaching materials for mathematics and other class. Also, the school's future plans to manage the required materials for some computers for teaching and add more books in the library (Head Teacher).

I am planning to take a unit test regularly from this month (Teacher).

Teacher gives homework sometimes but checks it as the end of the unit. If we do no complete the homework he beats us but never checks in the classroom. The teacher checks in after a long time (Students).

This shows that there is a lack of continuous assessment in school. The teacher solely punishes so the students had a negative attitude towards the mathematics teacher. In this connection, UNICEF (1999) states that there is ample research showing that students are quicker to learn, to read and acquire other academic skills

when first taught in the mother tongue. The data shows that Gurung students do not understand the second language adequately while the teacher teaches in Nepali. The second language hinders understanding and ideas about Mathematics which becomes a poor interaction with teacher and Gurung students.

Teachers rarely use students centred learning strategies for mathematics teaching and use the mathematical material for teaching Mathematics. Language, Lack of pre-knowledge, low attendance in school, do not study at home, do not do their homework and classwork regularly are the main problem of teaching Gurung students.

Language. According to Vygotsky, language holds central role and essential to the development of thinking. It is one aspect of the learning environment of Gurung students at school. Language is the greatest means of human civilization that sets them apart from other living beings. It is such a means by which we perform communication, thinking group solidarity, nation buildings, control, creation and absence of which no artistic academic and social activities can be thought. The language is a major component for learning when the researcher observed, it was found that language was a factor of misunderstanding between Gurung children and other caste children and also between teachers and Gurung students.

Gurung students have a language problem. They couldn't speak Nepali correctly, they mixed Nepali and Gurung language which is difficult for us in understanding. They feel difficulty in understanding the Nepali language in comparison to other students. That causes them are always backward (Teacher).

We understand clearly math teacher teaches in our language. We want a good teacher who is clear in mathematics and language, can give examples related to Gurung culture (Students view).

From the above view indicates that most of the Gurung students feel uneasy to speak and understand Nepali as well as English languages. UNESCO (2003) stated that elementary level instruction through the home language has psychological, sociological and educational strategies. Therefore, they spoke their own mother tongue at home. The language of Gurung was not matched with the school language. So students were taught in their language they would have an educational, psychological and sociological impact on their study. The response of teachers and students as given above proved that the problem of language is communication. From the above view, it showed that the Gurung students have poor in the Nepali language. They spoke their own mother tongue at home. The language of Gurung was incompatible with the school language. So, language is a major factor in creating difficulties in learning mathematics of Gurung students.

Teaching Method. Mathematics is the subject of practical knowledge, so the sufficient use of teaching materials is necessary for the study of this subject. The experienced teacher can make his class effective. The students can understand the problems if the teacher uses the tricky methods. A trained teacher can use right and appropriate the teaching materials and makes the teaching-learning easy and interesting.

Lev Vygotsky suggests that teaching method should be student oriented, discussion oriented, and discovery oriented. Now, the teaching-learning process cannot be effective in mathematics classrooms if there is not a chosen appropriate method. How the students can easily understand the solving process which is important. In mathematics teaching many methods are being used like problem-solving, discussion, question answer, practice, experimental, discovery, etc. and method to use always in problem-solving depends on teachers' experience,

qualification, training and so on. It is better to use student centred technique than a teacher-centred techique while teaching mathematics.

Episode

The teacher went to the class first, and the researcher also entered the class. All the students stood up and said good afternoon sir. The teacher told them to sit down. The physical environment of the classroom was a little good. When the teacher started to teach mathematics, there viewed the previous lesson of Algebraic expression then wrote a problem from the textbook and solved the problem on whiteboard by explaining it step by step. But the teacher did not use any materials related topic. After one demonstration, he gave one more problem to the students to solve. The teacher then just walked among the students and guided them who seem distribution with noise. Mostly in the process of teaching teacher used method and strategies was the lecture centred method in the teaching of mathematics. This episode shows the classroom environment is controlled by the teacher according to his method or strategies in the classroom.

From the above observation, it seems that there is no proper interaction between teacher and Gurung students. And also the teacher did not use the student-centred learning method. This observation shows that student's participation was poor and not achieved in equal learning experiences. It can be concluded that from the observation of the classroom, the teacher mostly used the lecture method. Though sometimes I found him using the problem-solving method, it was not sufficient. The classroom environment was authoritative. The class lacks students' friendly environment. Thus, It can be concluded that the traditional type of lecture method is one of the causes of poor learning in Gurung students.

Misconceptions about Mathematics. Misconception means a mistaken belief and a wrong idea. There are several common misconceptions about Mathematics. Some people think about mathematics is a difficult subject. One of the most pervasive misconceptions is that some people just are not good at mathematics because learning Mathematics requires special or rare abilities. The reality is that nearly everyone can do mathematics. All it takes is self-confidence and hard work – the same qualities needed to learn to read. Some people claim that the advanced mathematical concepts underlying many modern issues are too complex for the average person to understand. Also, some students think that math requires an exact answer, math makes you less Sensitive, math makes no allowance for creativity and math is irrelevant to my life. No matter what your path in college, career, and life, we will find Mathematics involved in many ways. Hundreds of examples show that Mathematics applies to everyone's life. It is relevant but also interesting and enjoyable. It was found that misconceptions about mathematics among students, parents, and teachers create more difficulties to learn mathematics easily.

Mathematics is a logical subject. It requires a lot of practice. It is not an easy subject than other subject but our students do not practice more time. If we do more practice in school and home, it will be simple and easier subject (Head Teacher).

Mathematics is a more difficult subject, it is a cumbersome subject. To get good marks, we must remember more definitions, formulas, and theorems, etc. (Students.

These above views show that teachers, students, and other persons think that mathematics is difficult, irrelevant subject. Without practice, without remembering the formulae, we cannot go ahead in mathematics. That's the wrong concept in our

students. Students, teachers who have the misconceptions about mathematics that creates difficulties in learning mathematics of Gurung students.

Ways to Minimize the Difficulties in Learning Mathematics

On the basis of above causes of difficulties of Gurung students in learning mathematics through the classroom observation, in-depth interview with key respondents; their parents, mathematics teachers, head teachers, and review of documents the way to minimize the causes of difficulties in learning mathematics of Gurung students are as follow:

Providing Hostel Facility. Hostels provide the best atmosphere for study. If students enjoy the hostel life in different ways, they also work very hard when the time comes for it. Weaker students can always get help from their friends. Studying away from home opens up a world of exciting learning possibilities like combine studies, mutual discussions, criticism, or debating, etc., that add charm to hostel life. In a hostel, a student comes in contact with a number of other students. He acquires many good qualities from them.

Through the interview with the participants their view about the hostel facility is in the following lines:

We have to work when we get home. There also no reading environment at home. Had the hostel been well-equipped, our study would have been better (Students).

If we had a Hostel, we would have to teach week math students in school and there would be some improvement in results (Head Teacher).

From the perception of the above views, I came to know that the hostel facility is one of the ways to address the difficulties of Gurung students in learning

mathematics. So providing a hostel facility that plays an important role in the improvement of results of Gurung students who are weak in mathematics.

Parental Involvement. Parents, teachers and students have a strong relationship in school system. Teaching learning process and its outcomes depends interlink with students, teachers and parents to each other. So parental involvement plays an important role in their children education and their achievement.
The perception views are given in the following lines:

Parents do not come to school. If the parents came to the school to inquire about their children, suggesting the school, there would be some help in improving the students' results (Head Teacher).

Our parents do not want to visit our school. They do not ask any question about our study. If our parents take interest of our reading it is better for us, which help us in our Mathematics learning (Students).

Reflecting and analyzing through the above views I came to know that parental involvement is a most important to bring new change and establish the learning knowledge of their children. Supporting this views Yadav (2017) agree that parents also should be careful about their children's learning ability and parents frequently should take information from school and if there are any problems to their children regarding their learning, they should guide at home and motivate them.

Students and Teachers regularity. Practice makes a man perfect. Regularity is the most important component of practice and the key to success. More legends have been created because of regularity rather than special skills or abilities. In this study, Irregularity is one of the main problem of Gurung students and teachers also. Sometimes, teachers are irregular in the school. Also, students are irregular in the school.

There is great impact in learning mathematics because of their frequent absence. Students should attend regular school to improve mathematics' result. We are trying for that. (Head Teacher)

If all the students were regular, it would have been easier for the students to pass in mathematics. Therefore, the school and principal should make rules for the student to come regularly. (Mathematics Teacher)

To improve the results, mathematics teacher and other teachers should come regularly. (Students)

Supporting this view, I came to know that students' and teachers' regularity is a way to minimize the difficulties of Gurung students in learning mathematics. Therefore, students, mathematics teachers, and other teachers should come regularly in the school to minimize the difficulties in learning mathematics.

Linking teaching pedagogy with student's daily life. When I observed the mathematics classes, mathematics teachers were not linking their homemade materials in teaching learning. Teachers do not want interlink their home made materials and mathematics.

The views of the participant on this are given follow:

Mathematics teacher have to use homemade materials and local materials which help the students to know mathematics and they can solve mathematics by interlinking with their daily life. But most of the teachers are practiced the students to get better marks unless understanding (Head Teacher).

Supporting this view, I came to know that linking teaching pedagogy with students' daily life is a way to address the difficulties of Gurung students in learning mathematics. Through the classroom observation, I discussed and suggested that being as mathematics teacher we need to practice in our teaching interlink with

student's daily life and his/her cultures. Cultural relevant pedagogy allows teachers to provide and use meaningful learning materials; creates environments, which includes cultures, customs, and traditions that are different from their own; and include lessons that assist students in making meaningful connections between their lives and school-related experience.

A Providing awareness program about mathematics. Hundreds of examples show that Mathematics applies to everyone's life. It is relevant but also interesting and enjoyable. It was found that misconceptions about mathematics among students, parents, and teachers create more difficulties to learn mathematics easily. So I think, we should conduct awareness program about mathematics.

About this line my participants said that:

Our students think that mathematics is a difficult and cumbersome subject. To overcome this, a mathematical consciousness program is needed (Head Teacher).

From the above perception I claimed that awareness programs can change the misconceptions about mathematics. So to stop misconceptions about mathematics need to conduct and involve in awareness program. Most of the Gurung students are uneducated so educational awareness programs is better to feel them the importance of mathematics in student life.

Constructivist learning environments foster learning activities that develop critical thinking skills, multiple perspectives and modes of presentation, social interaction with peers and teachers, student ownership in learning, and a self-awareness of the knowledge construction (Driscoll as cited Haward, 2008)

Take different test/assessment and provide feedback. Assessment plays a major role in how students learn, their motivation to learn, and how teachers teach. Assessment must be planned with its purpose in mind. Assessment for, as and of

learning all have a role to play in supporting and improving students learning, and must be appropriately balanced. A teachers and students work towards the achievement of curriculum outcomes, assessment play a constant role in informing instruction, guiding the students' next steps, and checking progress and achievement. Also, feedback is an important part of the assessment process. It has significant effect on student learning and has been described as "the most powerful single moderator that enhances achievement."

About this line my participant said that:

We need to take different tests from our mathematics teacher at school like as unit test, monthly test. So that it would be better for us to improving the results of mathematics. In the confusion of mathematical problems we need help and guideline from our teachers at school. (Respondent 1 & 2)

From the above respondent's views I claimed that Tests and feedback is a way to increase the achievement of mathematics. So, to deduce the difficulties of Gurung students in learning mathematics proper feedback is needed. The importance of assessment both for the teachers and students in the acquisition of knowledge and skills, and the ability to apply these in a given situation. (Upadhyay, 2067)

Involving group discussion and inter-relationship program. Most of the Gurung students are introvert and enjoy aloof. So to enhance the achievement of Gurung students in learning mathematics we can involve the Gurung students in group discussion and inter-relationship programs.

The views of the participants on this are given below:

Gurung students are shy in nature. They can't express their difficulties of mathematics with teachers and friends. So, to student need to proper involvement in

group discussion and enhance the relation with other caste students in the classroom. Then, they will be open to share them difficulties with teachers and friends (Parents).

Gurung students need to involve in group discussion while teaching mathematics. They will get better understanding from their friends then their teachers because they are afraid to ask with teacher directly. They have to cooperate with other by involving inter-relationship programs. (Mathematics teacher)

From the above views I claimed that group discussion and inter-relationship programs is one of the way to minimize the difficulties faced by Gurung students in learning mathematics. Group discussion is a method to solve mathematical problem of Gurung students. To enhance the relation with other students and teachers inter-relationship is better method to these Gurung students which, help them in cooperative learning in mathematics classes. Acharya (2017) supports that students can learn more effectively if teacher makes group and give tasks in collaboration focusing for marginalized students.

Providing Scholarship. Scholarship is a powerful means of facilitating the access of needy disadvantaged student to secondary level. Most of the Gurung students want their children works together with their parents to manage their house wages. So, schools should provide scholarship to the poor Gurung students.

The views of respondents' parents as below:

We are unable to manage our house wages also so, our children can't manage their reading materials so, some scholarship program is better for us which, help our children to buy their textbook, copies and other practice book (Parents).

From the perception of parents I claimed that when Gurung students can get the scholarship from school and other agencies they must be manage their reading textbook and other related materials. Education for all (2015) stated that scholarship

programmes with particular focus on girls and disadvantaged children that supported the expansion of school access, participation and retention in both primary and secondary education in the innovative activities that contributed to achievements of the students. So, providing scholarship program is one of the way to minimize the difficulties in learning mathematics.

By supporting all these views after observing the respondents' home, school environment, I claimed that Provide time for checking work, make rules for students to attend regular school, discuss with the teacher, students and parents about it and making policy about it and apply them, discuss the parents of Gurung students about providing enough time to read mathematics in the home, discuss with the students, teachers, and parents about the attendance of Gurung students and find a correct way of solution and apply them, make rules about the "low participation of Gurung students in their social and cultural activities" in the time of study and apply them, provide a scholarship for the support of mathematics' learning of Gurung students, mathematics teachers must focus on student-centered technique learning, interact more time with Gurung students than other students, teach basic concepts using concrete objects, teach mathematics using more appropriate educational teaching materials, more focus on student activity and creation are the ways to minimize the difficulties of Gurung students in learning mathematics.

Chapter -V

FINDINGS, CONCLUSIONS AND IMPLICATIONS

This chapter includes the findings, conclusions and implications of the whole study. The whole study is conducted to find out the causes of difficulties, analyse the causes of difficulties and explore ways to minimize the difficulties of Gurung students in learning mathematics and over-comes from these difficulties.

Findings of the Study

On the basis of analysis and interpretation of data which studied the causes of difficulties of Gurung students in learning mathematics for finding of the causes of difficulties of Gurung students in learning mathematics are given below:

- Gurung students are irregular in the school which is a barrier to learn mathematics.
- Gurung students have used mother language at home and school. They could not speak Nepali correctly which is difficult for understanding.
- Gurung student's parents are not responsible for their children's education. They are busy in own work and cultural activities.
- Traditional values and socio-cultural dominations.
- There is no proper interaction between Gurung students and mathematics teacher at the classroom.
- There is no proper interaction between Gurung students, teachers and parents about their children's progress.
- Most of the Gurung students did not do their homework and classwork regularly.
- Most of the Gurung students do not read and practice mathematics at home.

- Being illiterate/uneducated family caused their children get good guidance and motivation in the home to do homework and practice of mathematics subject.
- Lack of parental involvement in the school caused can't progress the Gurung students in learning mathematics.
- Lack of appropriate teaching methods, teaching learning materials, ICT.
- Lack of teachers support and motivation.
- Low socio-economic condition and child labour follow to the low achievement in the mathematics learning.
- The class lacks a student friendly environment.
- A Teacher couldn't care for every student individually.
- Lack of group discussion and inter-relationship while teaching among the students.
- Most of the Gurung students were not try to minimize their mathematical problems.
- Lack of continuous assessment.
- Students, teachers and parents were found to have misconceptions about mathematics.

As reflected in the above causes of difficulties of Gurung students of learning mathematics I would like to list out the ways to address the difficulties of Gurung students in learning mathematics by analysing the analysis and interpretation of the data. So ways to minimize the difficulties of Gurung students in learning mathematics are given below:

- Providing hostel facility,
- Take different tests and provide feedback,

- Make rules for teachers, students and apply them,
- Providing scholarship,
- Linking teaching pedagogy with students daily life,
- Parental Involvement,
- Teach basic concepts using concrete objects,
- Providing awareness program about mathematics,
- Involving group discussion and inter-relationship programs.

Conclusions

From the above stated finding of this study, it can be concluded that reaching and learning mathematics was not satisfactory and its prominent causes are the low economic social status of students and their parents and the students' passivity while learning. The main determinant to affect the Gurung students' education is that their parents are illiterate and their children are the means of earning to run their family.

On the one hand due to the low educational background and low economic condition of Gurung students' family Gurung students are not present in the school, on the other hand, the teachers in the school behave coldly to the Gurung students. The motivational factor is poor. The mathematics teacher does not motivate the Gurung students rather they discourage them. Mainly the other things to affect the Gurung students learning are the parents' education, economic condition. Moreover, their own passivity while studying and low confidence also hamper the learning.

This research explains the role of the instructional language used in the mathematics classroom. The teacher proposes an understanding of multicultural issues in the mathematics classroom must be focused on pedagogical consideration to improve mathematics learning and achievement by providing necessary learning opportunities through home management. Due to the lack of identification of the

appropriate teaching method to be used in teaching and the used teaching method seems to be ineffective to address the necessity of multi-ethnic students, multi-ethnic teaching skills, knowledge of the local community and cultural variability, necessary parents education, necessary poor parents occupation. Since Gurung students are suppressed, it is very difficult for them to maintain social decorum in society; similarly, they cannot go equally with others because of their socio-culture norms and values. So at last but not least we can claim that so many factors like socioeconomic factors, environment teacher's ill-treatment students' faults have affected the learning mathematics regarding the Gurung students.

Implications

The following are some of the issues not answered and be further studied to validate the result of the study which are the recommendation for further study.

Pedagogical Implications

- This study is done within limitations and in a particular area. The broad and general study may be done for the overall Gurung students' area.
- An extensive study may be done on the effect of parental involvement in learning Mathematics.
- A study on multicultural conical focusing on Gurung culture is necessary.
- The similar study should be done broadly (regional-wise as well national-wise) in order to establish the findings of the study.
- It should also be studied in primary and lower secondary level or the same aspect.

Policy Implications

- This study has limited to only the students' opinion towards difficulties faced by Gurung students in learning mathematics. It did not tell anything about

opinion of school administration and government towards difficulties faced by Gurung students. Thus, further research is needed in this direction.

- An urgent need is the conduct of short-term workshop and training where the teachers could be exposed to towards difficulties faced by Gurung students and using them from policy level.

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Appendix-A

Observation Form for Students Participation in Learning Mathematics in the Classroom

School:

Respondent's Attendance:

Date of Observation:

Topic/Subject topic:

Teacher's Activity-1

1. **Attendance:**
2. **Student's Participation in Learning mathematics (Individually):**

3. **Student's Participation in Learning mathematics (In Group):**

4. **Homework:**
5. **Classwork:**

6. **Observation Comment:**

The observation of the selected Dalit student was taken on the basis of following main topics and noted

- Friends behavior towards friends
- Teachers behavior towards the children
- Cultural environment effects on learning
- Main area of interest in learning
- Main interesting parts in learning mathematics
- Main difficulty things in learning mathematics.

Appendix-B

Interview Guideline with Key Respondents

Name of Students: Date:

Class: Roll No.:

Age: Gender:

Address:

Position in the class:

Name of School:

The interview with the key respondents had been taken on the basis of following main topics

- Family background, Culture and Language
- Personal history and Interest
- Reading opportunity at home
- View about the learning environment at school and home
- Interaction and discussion with pairs and teachers
- Using teaching learning materials in the classroom
- Using multimedia in the classroom
- Homework and class work
- View about mathematics and teachers
- Causes of difficulties in learning mathematics
- Expectation with teacher, parents and school.

Appendix-C

Interview Guideline with Mathematics Teacher

Name: Date:

Qualification: Sex:

Experience: Address:

Training:

Name of School:

The interview with the mathematics teacher had been taken on the basis of following main topics:

- Teaching method/strategies
- Instructional Plan (Yearly lesson plan, Unit plan, lesson plan)
- Use of instructional materials (other textbook, guide, Teacher guidance book, reference book, magazine)
- Classroom management
- Status of teaching learning materials and multimedia
- Problem of Gurung students on teaching
- Encouragement provided to the student learning
- Participation of students on the class
- Area of difficulties in learning mathematics
- Causes of difficulties in learning mathematics
- Effects of culture in learning mathematics
- Effects of mother tongue (Gurung Laguage) in learning mathematics
- Relation between teacher and students in the classroom.

Appendix-D

Interview Guideline with Principal

Name: Date:

Qualification: Sex:

Experience: Address:

Name of School: Training:

The interview with the Principal had been taken on the basis of following topics:

- Learning environment in the class
- Discussion about mathematics' result in SMC
- Teacher and students relation
- Students opportunity for learning with teacher
- Teacher training for mathematics teacher
- Learning difficulties of Gurung students at School
- Causes of difficulties in learning mathematics
- Effects of culture and language in learning mathematics

Appendix-E

Interview Guideline with Parents

Name: Date:

Age: Gender:

Educational Status:

Address:

The interview with the Parents had been taken on the basis of following main topics:

- Economic condition:
- Behavior towards child at home:
- Family environment of students for learning mathematics
- Child's interest:
- Reading/writing opportunity at home:
- Physical facility at home:
- Expectation from School: