

LEARNING DIFFICULTIES OF GURUNG STUDENTS IN MATHEMATICS

**A
THESIS
BY
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**IN THE PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE
DEGREE OF MASTER'S DEGREE IN MATHEMATICS EDUCATION**

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Thesis

By

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This thesis entitled "**Learning Difficulties of Gurung Students in Mathematics**" has been approving in partial fulfillment of the requirements for the Master's Degree in Mathematics Education.

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RECOMMENDATION FOR ACCEPTANCE

This is to certify that Mr. Krishna Dhami has completed his M.Ed. thesis entitled "**Learning difficulties of Gurung students in mathematics**" under my supervision during the period prescribed by the rules and regulations of Tribhuvan University, Kirtipur, Kathmandu, Nepal. I recommend and forward his thesis to the Department of Mathematics Education for the final viva-voce.

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Date: 3 February 2020

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DEDICATION

This thesis dedicated my respected mother **Ganga Devi Dhami**, late father **Kalu singh Dhami**, late elder brother **Ajab Dhami**, wife **KhageshariDhami** all my relative, family and friends who support me in every situation of my life.

DECLARATION

This thesis contains no material, which has been accepted for the award of other degree in any institution. To the best of my knowledge and belief this thesis contains no material previously published by any authors except due acknowledgement has been made.

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.....

Krishna Dhami

ABSTRACT

This study was carried out with the objectives to explore existing "Learning difficulties of Gurung students in mathematics" and investigate the challenges faced by teacher in classroom practices. This study used qualitative research design with case study approach where the researcher found the Gurung students actual reason for mathematics learning for purposive sampling procedure. Data collection procedure was carried out through in-depth interview, observation and previous results in mathematics of the school. Data were analyzed inductively so as to use the results of the analysis as basis for subsequent data collection. From this study, it was found that existing mathematics classroom practice could not be conducted on the demand of Gurung students. Theoretically, the math teacher of that school had knowledge about conducting the mathematics classroom but practically, it was difficult to conduct the class in their language. Unfortunately, it was not being implemented in the classroom by the teacher and there was no good environment for mathematics learning.

This research study has investigated the teachers challenge for the Gurung students in mathematics teaching such as multilingualism, prefer appropriate aids, assessment system, manage learner friendly environment, conducive co-operate and collaborative learning, community involvement and integrating curriculum as learner friendly through bilingual perspective. A noticeable observation there would be several factors of challenges in mathematics classroom where as the findings of this study contribute to the knowledge basis on the management of challenges and also inform stakeholders as well as policy maker.

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Chapter - I

INTRODUCTION

Background of the Study

The Gurungs, who are also known as Tamu are hill people. As the movement of people from one place to another as a historical phenomenon, Gurung an ethnic group migrated from Mongolia in the 6th century to the central region of Asia. The word 'Ground' is actually pronounced as 'Gu-Rewan', which is the combination of two sound-'Gu' means nine according to Tibetan language and 'Rewan' means mountain and hills. Therefore, the word 'Gu-Rewang' 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 Gu-Rewang/Gurung. Gurung are found in the Indian hill Kurseong Doors, Hasimara (North Bengal) of west Bengal, South West and East districts of the state of Sikkim, Through Assam, Dehra Dun, Uttar Pradesh, Arunachal Pradesh as well as other parts of India. A large number of the Gurung community also live in Nepal. Gurungs are found outside India and Nepal where they have played a renowned role as Gorkha soldiers (Lama2018)

Their ancestors practiced BONPS (nature's worship), later they adopted Tibetan Buddhism. Nowadays Gurungs follow Buddhism as well as their own primitive religion.

The Gurungs have a rich tradition of music, culture and 'Rodhi'. Gurungs are hardworking, adaptable and quick learners. Their traditional occupations were sheep herding and trans Himalayan trade. In the 19th and 20th century, many Gurungs were recruited into the British and Indian regiments.

To conclude, the Gurungs are Tribal Buddhist by origin, have a rich culture and their major traditional occupations like sheep herding, honey hunting and services in the cultural identity showing they are a Himalaya Tribes. Today very few people

know their history which is on the verge of extinction from the world (Lama 2018)

Nepal is a multi-cultural, multi-ethnic, multi-lingual country. The Central Bureau of statistics provided data that there were only 59 ethnic-caste group according to census 1991 where as it was increased upto 125 ethnic-cast group on the census 2011. These result's reveal that the number of cast group is increasing. These diverse ethnic group can be categorized into five broad culture group. a) Hindu group, b) the Newar, c) the Janajati d) Muslim and e) Other (Dahal 1995). According to census 2011, there are 123 language spoken as a mother tongue in Nepal. They live primarily in north west Nepal in Gandaki zone specifically Lamjung, Kaski, Mustang, Dolpa, Tanahu, Parbat, Syangja, Manang districts as well as around the Annapurna mountain range. Few of them live in Baglung, Okhaldhunga and Taplejung districts and Machhapuchhre range as well.

The population of Gurung is 686000(0.39% of Nepal's total population) according to the census 2011. Among them only 338925 can speak Gurung language. Their ancestors, culture and tradition are traced back to Tibet. All people are guided by their own culture.

Mathematics is taken as important as language and literacy. Mathematics begin with the entry to kindergarten and remains strong predictor of later academic success and is in fact an even better predictor of later success than early reading ability while reading predicts only later reading ability, mathematics performance predicts not only later mathematics but also later reading ability (Ducan et.2001) mathematics is indeed a core component of education from very early ages to the higher grades. Mathematics education is important in language and literacy. Children

learn to speak, read and write the language of mathematics in order to communicate mathematical ideas.

The social justice theory argues that much of the cultural capital embraced in school is supportive to the student who come from mainstream society and partially available to the marginalized community (Corson 1990) This is similar to Nepalese community.

Banco emphasizes its importance and use in many fields. Mathematics has close relationship with human life and is related to many social subjects like economics, population, sociology, physics and chemistry. so Mathematic should be made easy so that everyone can easily learn it. However, the statement of NCTM (1989) the social injustice of past schooling practices can no longer be tolerated. Mathematic has become a critical filter for employment and full participation in our society. We cannot afford to have majority of our population mathematically illiterate. Equity has become an economic necessity indicates the main role of mathematics that filters pupils which generates negative attitudes of the students toward mathematic (Upadhaya, 2064 B.S)

The mathematics ideas such as measurement, counting, classifying etc. are created from the cultural activities of people that can be in different cultural base. Today this cultural based mathematics is known as the term "Ethno-mathematics". The practical mathematics such as counting, calculating, weighting, measuring, estimating etc. are created from the cultural activities of the people which may be different in nature in different culture base. This culture based mathematic refers to a form of mathematics that varies because of being embedded in cultural activities. Connecting their mathematical with their formal school mathematics a good pedagogical practice while learning mathematics right after schooling.

Mathematics is the language of physical sciences and certainly no more excellent language was ever created by the mind of man. The usefulness of mathematics is perceived in different ways. For man, it seems to be items home. In the office or in workshop, it is highly needed. Students apply mathematical concepts, skills and logical solutions to solve different kinds of problems even it is beneficial in adulthood to old age.

In present context, educational status of Gurung doesn't seem satisfactory in literacy rate as well as schooling status of the young. Mathematical achievement of students vary in school education even different according to region, gender, cast and ethnicity in Nepal. Students consider Mathematics as a different subject. Different education reports have emphasis in method of technical and abstract subject in nature and considered exceptionally difficult for the learners. Its study requires special social environment, language, home and school culture, learning opportunities in family and teaching methods so that school can facilitate mathematics learning. In the case of Gurung students, these variables should be facilitated mathematics learning. In the case of Gurung students these variable should be considered for their better achievement in mathematics.

EDSC(1999) has presented the picture that multilingual children achieve low score in comparison to the children who speak Nepali as their first language. This finding leads us to different measure to help minority language group children. To sort out these language issues, it is important to set up and strengthen the other tongue medium school by way of promoting, regularizing and strengthening them. However substantial study has so far been carried out regarding the effectiveness of the mother tongue medium schools and their infrastructures, instructions, policies, strategies,

modalities, framework of teacher's preparation and orientation, materials developments and responses of the communities concerned.

The different ethnic groups have their own culture and the particular culture affects learning of mathematics. The Gurung has traditional culture. Children of Gurung do speak Gurung language at home, adopt own life style and culture that hinder the better achievement in mathematics. The enlisted gap between home's and school's culture and language cause the difficulties in learning mathematic. The study aims to find the causes of family environment. Interface of two distinct culture, family environment and school environment, language and teaching methods may create difficulties in learning mathematics. Since every individual has different life style, it reflects the cultural differences in learning.

As a researcher a teacher of Durga secondary school at Sulikot rural municipality which is situated in Gorkha district conducted research in my neighboring school Siddhartha secondary school which has got the nil result in academic year 2073-74 in mathematics in the SEE. In this respect, the researcher is very shocked about the result of the school. This problem made compelled the researcher to study behind the reason. So, the researcher wants to conduct the research through the case study.

Statement of Problem

In the teaching experiences of researcher of four months at Shree Durga Secondary school of Gorkha district, he has faced different problems while teaching mathematics. The research found the record of SEE result of academic year 2073-74, the result was nil and students were failed in mathematics. They had got 'E' grade in mathematics. Every year Gurung students participate in SEE examination but nobody passes the SEE in mathematics which is given below in data.

Gurung students fail in mathematics subject which shows that there is low achievement of Gurung students in learning mathematics. Gurung children have low achievement in mathematics in every class in comparison to other caste students. So I intend to study the causes of learning difficulties in mathematics of Gurung students.

1. Why do Gurung students have difficulties in learning mathematics in secondary level?
2. Which factors can minimize their difficulties in learning mathematics?

Objective of Study

The following are the objectives of the study

1. To explore the causes of difficulties in learning mathematics of Gurung students in secondary level.
2. To analyze the causes of low achievement of Gurung students in mathematics.

Justification of the Study

Mathematics is a key subject in school curriculum throughout the world. In our country it has been taught from primary to secondary level as compulsory subject and also above as major subject. Mathematics learning helps the students to understand and to interpret the important qualitative aspect identifying the difficulties of learning the different part of mathematics like mathematics, algebra, geometry etc.

This study is concerned with the difficulties in learning mathematic of students at secondary level in Gorkha district. This study has tried to find out the causes of learning difficulties of Gurung students at secondary level and to verify the impact of home environment in learning mathematics of Gurung students. The following are the significances of this study.

1. This study is used to deduce the difficulties in learning mathematics of Gurung students at secondary level.
2. Its finding helps to improve the mathematics achievement of Gurung students.
3. This study supports/ help Gurung students to open the door for the further study in problem of mathematics learning.
4. This study helps Gurung to teacher, teacher education, mathematics trainer, curriculum planners and writer of text book.
5. This study supports to understand the Gurung community.
6. This study is one of the most affecting factor.

Delimitation of study

This qualitative research was related to causes of learning difficulties in mathematics of Gurung students at secondary level. The following were the delimitation of the study.

1. This study was delimited in Gorkha district.
2. This study was conducted only for class ten Gurung students of Siddhartha secondary school in Gorkha district.

Definition of Related Terms

1. Learning environment at home a school the school has not good management in any field and home also Gurung students have lack of room materials.
2. Teacher students Introduction due to the language difficulties. They do not speak Nepali and teacher also learnt to teach in their language.

Gurung : An indigenous ethnic group of Nepal who are scattered in many districts.

Interpersonal relation: Interpersonal relation means relation between Gurung students from other castes.

Learning Difficulties: Learning difficulties is obstruction in learning mathematics due to communication interaction pattern behavior, participation and learning opportunities at home and school.

Participations: In this research participation means regularity in classroom interaction with teacher and friends, completion of homework and class work etc.

Students: Students are Gurung students who study in sample school.

Irregularity: Generally, Gurung students have to do a lot of household works so they remain absent.

Gender discrimination: Male Gurung children are sent to city for education but females are not allowed to do so. Neither female Gurung children has free time in home to study.

Education and economic condition of parents: Gurung people have less interest in education and they are still living traditional life style. Therefore, their economic level is low.

Occupation of parents: They are still doing traditional farming.

Chapter II

REVIEW OF RELATED LITERATURE

The review of related literature should conclude with the summary containing the area of agreement and disagreement in finding. Review of articles that summarizes related study, are often useful ensuring time and effort, capitalizing on the review of expert's research can be fruitful for such review as those include in the review of education research and provides helpful ideas and suggestions. This chapter describes the empirical literature, theoretical literature and conceptual framework of this study.

Empirical Literature

The empirical study of literature attracts scholarship particularly in the area of reception and audience studies and in cognitive psychology when it is concerned with question of reading. In these two areas, research and studies based on the framework are steadily going. Future fields where the framework in various revised and expanded various attracts scholarships (comparative) culture studies and pedagogy. The empirical study of literature originated as a reaction to solve the basic problem of hermeneutics, that is, how the validation of literary interpretation can be demonstrated.

Jaishi (2013) did a study on "Difficulties in learning mathematics of Tamang student". The objectives of the study were to explore the cases of learning difficulties of Tamang students and to identify the home environment of Tamang students to learn mathematics to relate them to their problems, the students were chosen according to purposive sampling process, Observation and in depth interview were used to identify the learning difficulties. The conclusion of the study was that language, culture, economic status, plan important role in learning difficulties of

Tamang students, the learning environment and instructional materials are the main key which affect the study of Tamang students.

Khanal (2017) did a study on "Girls perception toward gender discrimination and its effect in learning mathematics". The objective of the study to identify the girls' perception and situation of gender discrimination in mathematics classroom and to analyze the effects of discrimination in learning mathematics to relate the problems. The students were chosen by random sampling process from the population group. The information collected by questionnaire form triggered the conclusion that parent's behavior is more effective than, other types of discrimination. The result shows that parent's role is important more than other.

Aale (2012) did a study on "Mathematics learning difficulties of Magar children at primary level". The objectives of the study to analyze the role of cultural continuity of school and home culture in facilitation mathematics learning and to explain the individual and school strategies to address learning difficulty in mathematics of Magar student related to the problem. The student interview and observation form were used to identify the learning difficulties. He concluded that language learning opportunity, home management, appropriate teaching method, cultural variability, parent's occupation affects in learning mathematics.

Luitel(2005) did a study on "difficulties area in arithmetic for grade VIII deaf students". The objectives of the study were to identify the difficulties in arithmetic and to locate the difficulty area to relate then to their cases. The students were chosen by sample random process. Observation and interview were used to identify the learning difficulties. The research concluded deaf students had the fundamental knowledge of mathematics but in academic course, they were feeling difficulties in learning mathematics (arithmetic) because of various reasons such as to develop clear

conception on verbal problem, to generalize the learning concept, to understand the language association, limited vocabulary in mathematical word, fast forgetting, to discriminate the condition of the situation. These difficulties are not only due to their problem but due to the lack of supportive environment such as teaching method, instructional materials, social interaction and their place in the family and society.

Ghimire(2005) did a study on "Difficulties on learning algebra". The objectives of the study were to identify the difficulties on content of algebra and to identify the difficulties on the classroom practices. This study was conducted taking four blind students. The students were selected by random sampling process. Different tools such as observation, interview and written test were applied to identify their learning difficulties on algebra. The study concluded that the blind students are able to add, subtract, multiple of simple and short algebraic terms but unable to divide and they have limited knowledge about factorization, HCF and LCM. They only recognized the equation but could not solve it and the co-ordinate geometry was not of their capacity. The major difficulties of the blind students were found that they were unable to solve process of mathematic problem in Brail Script, to adjust in integrated class in learning mathematics and use materials and methods in mathematics learning.

CERID(1993) conducted a study report on "meeting basic learning need of primary school children in Nepal ", which concluded that verbal problem in algebra and geometry were the difficult area of learning for the students. Language of the students was poor to comprehend. The language used in the text book as well as their teaching technique were almost traditional without the objective to identify the basic learning need of primary school children and unprivileged population groups.

Pant(2007) in his doctoral dissertation entitled "A study of learning difficulties in mathematics among grade V students in the Kathmandu valley of Nepal" did a study in the government and private school of Kathmandu valley. He took the students, teachers and parents of the selected schools as his respondents and found that the school related factor (quality school program quality of teachers, time allotment), class specific factor(quality of instruction, time for learning, opportunity of learning, relationship with other students) home related factors (parental help, sibling support), social factor (home culture and school culture difference, language of school and home), personal factors (time for learning and motivation) are the main factors which influence the mathematics learning.

Adhikari (2006) did a study on "Cultural discontinuity and difficulties in learning mathematics of Dalit student". The objectives of this study were to identify the course of difficulties in learning mathematics at school, influencing factors in learning mathematics, impact of home environment. The study was done on four Dalit students. In depth interview, observation and written documents were the main tools. The study concluded that there is discontinuity between home culture and school culture. The home environment is not supportive for mathematics learning.

Neupane,(2005) conducted a study on the topic "Effect of socio-economic status on mathematics achievement". The study focused to find the correlation between socio-economic status and mathematics achievement. Lamjung district of Nepal was the area of study. The total sample of study was conducted in eighty students of grade III. The samples were collected from five selected public schools. This study was designed for the comparison of the Dura and Gurung students. He concluded that achievement in mathematics of Gurung students were found to be positively correlated with father's education. But the other variables were negatively

correlated with mathematics achievement. Similarly, achievement in mathematics Dura students positively related with father's education. But the other variables were negatively correlated with achievement in mathematics. The mean, standard deviations, correlation and multiple regression tools were used for the analysis of data.

Khadka (2006) did a study on "Factor influencing the Attitudes towards the Learning mathematics to the children of Ex-kamaiyas". The objectives of the study were to find out the factor affecting the attitudes towards learning mathematics of the children of ex-kamaiyas in Kailali district and to find out liking and disliking factors of mathematics to the focused group. Interview and observation were applied together to collect related information and data. The study concluded that school's physical condition, socioeconomic status of ex-kamaiyas, teachers' attribution, mechanism destinations of incentives, averages, of focused children. Parents low involvement in education were found to be most influencing factors in learning mathematics. Similarly, income, trend of tuition, trend of grace mark system, untrained teacher and non-experienced teachers, high gap between the school and community relation, myths and misconceptions towards mathematics anxiety towards mathematics, non-availability of test book on time use of second language in teaching, lack of local teachers, facilities of teaching materials, less interaction between the students and teacher are causing hindrances in learning mathematics.

Sah (2006) conducted a research on the topic "Effect of occupation on mathematics achievement within Rai community. He found that the achievement of students from three different occupational group parents (Farmer, Indian army, government (service) were in average position. While using t-test between two variables, the achievements of children of farmer was in weaker position than Indian

army and government service holder's student. Similarly, while comparing the private and government schools, the achievement of government school's students could not manage time for study and regular attendance. The achievement between Indian army government service holder's students were found similar. The environment at home of both students' groups were in similar manner. Similarly, regular attendance, doing homework and active participation are the major causes of equal achievement between the children of Indian army and government service holder's children.

Nath (2002) conducted his research study on the topic, "A study on the effects of previous knowledge on the learning achievement of mathematics". His study was especially on the topic Trigonometry with objectives to determine the effects of previous knowledge on the learning achievement of students in mathematic (Trigonometry) and to compare the achievement of boys and girls in trigonometry. He concluded the research work stating that the previous knowledge of the students plays a significant effect on students' achievement in trigonometry and the previous knowledge could be helpful to enhance the student's learning achievement.

From above imperial reviews, the research focused on culture, language, teaching methods, materials, interaction, home environment, family background, and economic status for the effective learning. But most of the students feel mathematics to be very difficult. So the researcher's target was to find the causes of difficulties of learning mathematics and to verify the impact of home environment of Mager students to learn mathematics.

Theoretical Literature

Vygotsky's work on the individual/social relation provides theoretical tools for interpreting the origins of thinking and learning. Drawing on Vygotsky's ideas and data from one classroom, categories of practice relating to teaching and learning were

developed in order to identify themes for an explanation of mathematical development within the classroom. Themes information made a qualitative investigating of the process that in Vygotskian understanding, characterizes the emergence of mathematical development. The investigation endeavored to examine that relation to respect to teacher's activities and her students' activities in the mathematics classroom (Saracho,2017).

Every child learns from society, from social contact with home, family and universe. socio-cultural theories of mathematics learning are generally and culturally situated nature of mathematical activities over individual sensory-motor functions. Vygotsky (1978) identified three general themes of fundamental of his theory of development. Higher mental human processes can be best understood by focusing on how and when they occur, higher mental processes, such memory, concepts and reasoning, originate between people on the social plan before appearing in the individual on the psychological plan, and culture tools and signs such as language, writing and symbols mediate higher mental processes (Budha,2017).

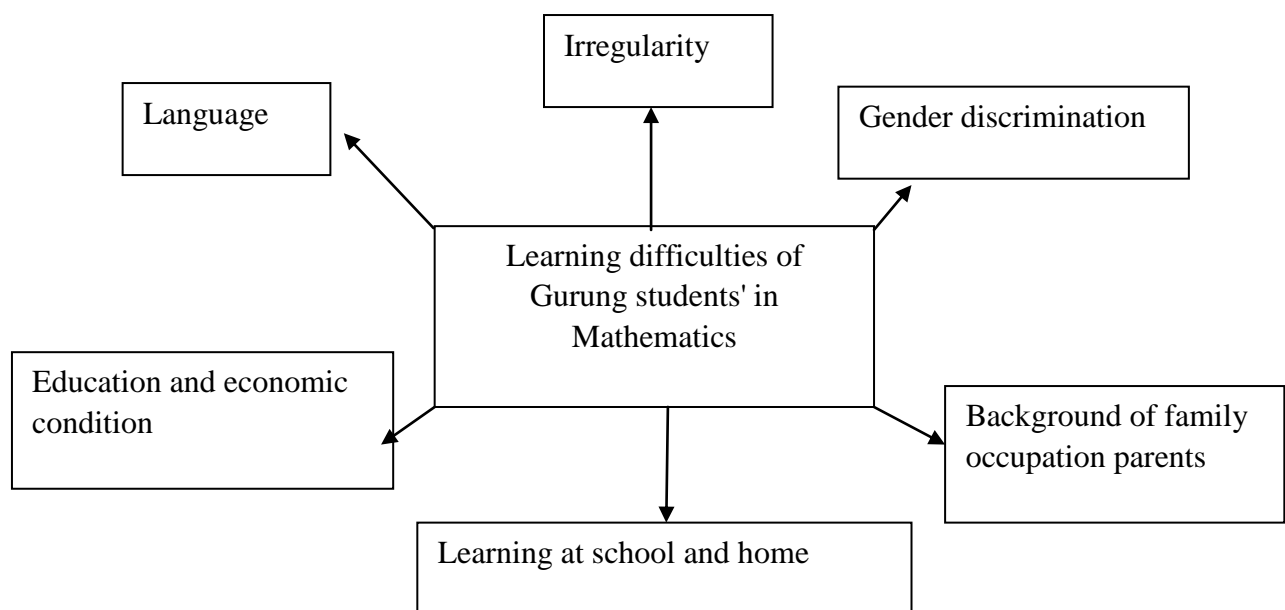
This Vygotsky theory of social constructivism focuses on the artifacts that are created through the social interactions in group. It emphasized the profound influence of social contexts in the advances level of knowing. It states that knowledge construction is both a social and cognitive process. Knowledge and meaning are activity and collaboratively constructed in social contest mediated by frequent socio discourses. In a social constructivist learning environment, affective learning happens only through interactive processes of discussion, negotiation and sharing. This theory focused on cultural influences on cognitive development. Vygotsky claimed that infants are born with basic materials/ abilities for intellectual development. He believes that young children are curious and actively involved in their own learning

and discovery and development of new schema. More important learning by the child occurs through social interaction with a skillful tutor. Then tutor may model of behaviors or provides verbal instruction for the child. The child seeks to understand the actions or instructions provided by the tutor (often the parents or teacher) then internalizes the information, using it to guide or regulate their own performance (Kafle,2012).

Conceptual Framework

This is a survey design study, the researcher tried to find out the causes of learning difficulties in mathematics of Gurung students at secondary level. The researcher read the thesis of Aale(2012), Jaishi(2013) and Pant(2006). The researcher has taken the ideas from their conceptual framework to develop own conceptual framework on objectives. The following is caused of learning difficulties in mathematics of Gurung students at secondary level.

Conceptual Framework of learning difficulties in mathematics



This conceptual framework describes about the Gurung children. there was great discontinuity between their everyday life and school activities. As they get practical knowledge in home and theoretical knowledge at school. The language, economic condition, interpretation with teachers and students, cultural differences in home and school played vital role in learning mathematics. This study supports the Gurung children who get difficulties in learning mathematics at secondary level. The language is major component for learning. There was misunderstanding between communication interaction that refers to the sharing co-operation and adjustment between two or more persons.

Chapter III

METHODS AND PROCEDURES

Research is the systematic approach to obtain new reliable knowledge (Ethridg, 1995). Research methodology is a science, which determines how the research becomes complete and systematic. So, the methodology is the branch of the research. It is a qualitative research studies things in their natural setting attempting to make sense of or interprets phenomenon in terms of empirical materials, case study, personal experience, life story, interview, observation, historical interaction, visual text that describes routine and problematic moment and meaning in individual's lives (Anderson, 2001).

This chapter describes the design of study, sample of study, tools of study, data collection method, interpretation of the data. Here, researcher took some major procedures for research methodology.

Design of the study

In this study, the research was qualitative research. This was applied to the research design of case study, this study that may concerned with cases of difficulties faced in learning mathematics of Gurung community as a case he studied Siddhartha secondary school researched "A comprehensive study of a social unit is that unit person, a group, a social institution, a district or a community called a case study" (young 1998). In the case study researcher typically observed the characteristics of an individual unit, a child, a school or a community. The data were collected through observation, interviewed with a student mathematics teacher, head teacher and parents of sample of study. The obtained data analyzed through the descriptive method.

Sample of the Study

In this study, the unit of analysis was Gurung students. The researcher selected four students from Gurung community students as the case of study of grade ten. In this study, the researcher used purposive sampling by selecting two boys and two girls for the population. The criteria of selecting respondent were gender, family status and student's position in class.

According to District education office of Gorkha, there are 12 public school in SulikhotRular Municipality. The researcher selected one secondary public school by purposively sampling method where the percentage of the Gurung students were maximum in grade 10. The researcher selected for Gurung student. So those students were taken from Shree Siddhartha secondary school. The respondents of the study were mathematics teacher, headmaster, students and related students.

Tools of the Study

For this study, the researcher used the following tools to collect the necessary information.

Guidelines

"Observation may be defined as systematic viewing coupled with consideration of seen phenomenon" (Young, 1998). The observation schedule was prepared by using the article, research. Here researcher included the case, student's behavior with teacher, behaviors peers, attitude towards teachers and peers, relation with mathematics teachers, head teachers and peers, participation of case students in group and individuals, homework, class work, teacher's activities with case students. The researcher used the personal diary for recording data.

Interview Schedule

"The interview is the face to interpersonal role situation in which one person, interviewer, ask a person being interviewed, the respondent, questions designed to obtained answers, pertinent to the research problem" (Kerlinger, 2000). On the basis of objective of the study, the researcher prepared the interview schedule from mathematics teacher, head teacher, student as well as parents.

Validity of Study

Validity refers to how well a test measures what it is purposed to measure. Reliability and validity of the research tools determined with the help of related theory and suggestion of subject expert. To determine the validity of research tools the interview took over a period of time with the selected samples. The frequent class observation did to check the consistency of method and procedures used in classroom. The school documents were gathered for the trust of the study. The researcher also tried to ensure the internal validity by observing the same data on the basis theoretical framework which was developed by the researcher in previous section.

Data Collection Procedure

The following procedures of collecting data were followed for this study

- Mathematics observation to note the events of the classroom and school. The researcher listened, interacted and then recorded the essential data about learning environment and activities in real situation. The researcher also maintained a diary to note down information during observation. The researcher observed the Grade 10 during observation period and noted the events of the classroom and environment. The detailed data of school environment, home environment and individual respondent character was obtained by observing and filling the observation forms.

- Interview also conducted to Gurung students, their parents, mathematics teacher and head teacher separately in order to investigate difficulty faced by Gurung students in learning mathematics. Researcher prepared interview guidelines under the heading like home environment, school environment, workload, learning style and their interest in mathematics. Researcher conducted interview with Gurung student using interview guideline one by one to collect identical information from all respondents. Similarly, separate interview also conducted with math teacher, head teacher and parents of each respondent by using interview guidelines. Similarly, views of head teacher towards the respondents were taken separately. Also frequent interaction conducted with the parents, teacher and the respondents. Ultimately, the researcher prepared the individual respondent records separately.
- The unpublished documents like school files, attendance register, school result sheet, teacher profile, obtained marks sheet of respondents from 9 and 10 classes, scholarship.

Data Analysis and Interpretation Procedure

Analysis of the data were descriptive in nature. I read all the data to obtain the general sense. At first, the researcher collected information was data analysis process citation categorized according to the category of the respondents and different themes were given in the form of interview and the observation form.

Recently, the word 'triangulation' was used widely in the discussion of qualitative research. Triangulations a method to get an accurate and reliable picture of situation. The idea to asses learning and attitudes from a range of perspectives is called triangulation. The researcher tried to understand by collecting different kinds of

information from different perspectives from different sources and with data triangulation where the data were obtained from the classroom observation and interview with the students, teacher, head teacher and parents scheme register of Gurung students studied thoroughly to collect secondary information from the school.

Chapter- IV

DATA ANALYSIS AND INTERPRETATION

This study was related to the qualitative study. The main focus of this study was to identify the causes of learning difficulties in mathematics of Gurung students. This case study is a case study related to causes of learning difficulties of Gurung students at Grade X of Gorkha district. The main objectives of this study were to analyze the causes of Gurung students' low achievement in mathematics. The main tools used for this study were interview schedules, class observation form and related published and unpublished school documents. The main respondents of this study were focused on children parents, head teacher and mathematics teacher of Grade X of the school. Only one school was chosen for this study purposively.

This chapter includes the analysis and interpretation of study. The data obtained of the study were presented in terms of following topics. Learning environment at home and school, language, interpersonal relation, teacher students' interaction gender, discrimination irregularity, lack of parental involvement in the school, lack of believe and support and teaching method background of the students, physical, facilities, school environment and interaction of students. The collected information at first was categorized according to the category of the respondent and different themes were given in the text of interview of the observation notes. These themes were considered as a code and similar code. Version of respondents were collected together and explained in their perspectives. The school environment and interviewing with the head teacher as well document analysis of the schools. The home environment and other details were obtained by taking interview with their parents. The researcher had noted the case students, per class documents, their regularity in the class, their behaviors etc. from the school documents.

The descriptive method was used mainly in this qualitative study. The researcher had as attempted to calculate the study describing and analyzing the information acquired in the research process. The collected information was analyzed and described in the following headings.

Introduction case Students

Respondent A

Respondent-A was of seventeen years old boy and he studies in class 10. He was born in Sulikot village council; ward no 5, Bhandrigaun of Gorkha district. It takes about 2 hours to go to school from his home. There are six members in his family. In comparison with other Gurung families, his family seemed little bit small. His father is a farmer and his mother is a housewife. Sometimes his father and mother go to forest to bring firewood, grass, as well as gitthavyakurs. No sources of extra income is in his house. They spend their life difficulty. From this research, it seems that his family background in economic condition as well as in education was very low. Before the school time, he was busy in work, he was very careless about his study. He felt that mathematics is very hard subject. He did not complete his homework. Due to poverty, he was unable to take tuition class. When the researcher was in his house, he said "I felt difficulties in learning mathematics because there were no higher educated people to teach mathematics. He said" ma, hisabambujhadhi (i.e. in English: I could not understand mathematics".

Respondent-B

Respondent-B was nineteen years old girl studying in class-X. She was born at Sulikot Village Council, ward no 7 Chundada of Gorkha district. It takes about 9 hours to go to school from her home. There were seven family members in her family. In her family, she is the elder child of her parents. When researcher observed her

house and family, he found that their economic condition to be very poor. The researcher found that as she is the eldest child of her family, she always engaged herself in household works. So, she did not get enough time to do mathematics practices at home.

Her family's main source of incomes is from the business of selling alcohol. Her mother makes alcohol after selling alcohol, she gets some money. She also helps her mother making alcohol. She said "Our economic condition is very poor". She was laborious and curious student. She was interested in study. She could not speak Nepali language fluently. She told I feel difficulty while writing and speaking Nepali language at school."She does homework every day and attends the class regularly. she told, I understand mathematics as a difficult subject due to various reasons such as lack of tuition opportunity, poor economic condition, not enough time to do the practices, lack of educated people at home, due to the traditional culture and poor language."

Respondent-C

Respondent-C was a sixteen years old girl studying in Grade X, she was born in Sulikot village council, ward no 9, Kharung of Gorkha district. As a member from joint family, she had thirteen members in her family. She was elder daughter in her family. Her family's economic condition was not good. Her father was in India for earning. Her main work was to take care of her younger sister/brother when her elder male member went for their work. Her family was illiterate family.

She has been average in study and she showed some interest in her study but due to insufficient time, she could not practice math and, other homework.

Mathematics teacher said,"She tries to do homework but commits mistakes while doing, due to lack of guidance. She said that her friends had already married. She was

quite aged among her friends and due to that she felt uneasy with her classmates. Her mother said, "Due to joint family, she had little space to get adjust and had to pay more attention to her younger sister, who obstructed in the class and share her opinions with teachers. She said that teachers also did not pay attention to the girls students. The head teacher said "her parents don't visit school and try to know about her education". According to her mother, they were more conscious about marriage rather than continuing her study.

Respondent-D

Respondent-D of the Gurung student was studying in class X. He was eighteen years old. He got first position in class X. However, he likes Nepali and science subject but he does not like mathematics and English. He is one of the talented students of that school and he participates in extracurricular activities. But due to her poor economic condition of his family. He did not spend more time in study. Also he doesn't practice mathematics problems at home due to lack of time. His mother is housewife and his mother works in the field of other person as a worker. His father is a farmer so he lacks awareness to teach his children.

The researcher also found that he regularly participated in extracurricular activities in the school and most of time he won the first prize. The researcher also found that he was regular in taking class. However, sometimes, he missed the class because of his household work. He was also punctual in taking class. He wanted to do mathematics homework but he rarely completed mathematics problems because he did not have enough time to do homework.

Causes of difficulties faced by Gurung Students in Learning Mathematics

There were so many causes of difficulties faced by Gurung students in learning mathematics. These difficulties have been collected with the help of related

literature, theory, interview with students, their parents and guardians, mathematics teacher and related document of school. Such variables are described separately as follow.

Learning environment at home and school

The home is a first school for learners. The learners spend most of the time in the house. The children learn about many aspects from their parents. The school environment decides the future position of the students. Environment is the first school to all educational atmosphere in home and school. Home is regarded as the first school to all each other. Home environment plays vital role in learning. Home environment refers the occupation, economic condition, and learning opportunity of students at home. School is the second home of any child. The teachers, students and parents are the components of the school. School environment reflects believe and tradition of the school community delineating the relation among parents, students and teachers. Scholarship to the students, extra classes provided, dominance of language and cultural dominance are the major aspects of school environment.

Gurung students use information language in his/her family, unrespect word (i.e. not standard vocabulary) but in school informal language is not suitable because in school standard vocabulary are used. In every household there is micro cultural which is discontinued in school culture. There is a gap between silence culture and forward culture. Home environment is affected by everyday life of all individuals.

Culture is as the totality of socially transmitted behavior, patterns, arts, beliefs, institutions and all other products of human work and thought as well as the focus of inherited ideas. In a sense, culture is related to the development of the mentality, which people follow during their life in their learning activities. There are many cultural issues in teaching and learning mathematics in the context of Nepal.

"We don't have basic things in our house, how we go on this way. we have difficult situation to survive. How can we send the children to school?" (parent's views)

From the above view, it indicates that the economics status of family influence to the achievement of the student. The high economic can get better chances to buy books, copies and take tuition and coaching classes. Mathematic needs more labor and effort than other subjects. Gurung student have not obtained such facilities at home.

One of the respondents expressed as.

Our parents pushed us to go in the jungle and bring firewood and grass. They said this is our main occupation. Parents says "Yours attend in bringing grass and firewood is better than going to school."

The above view indicates that children of Gurung community had no sufficient time at home for practice. They have to be engaged to solve their economic problems. Mathematics need more practice to solve their economic problems. Mathematics need more practice to achieve the good marks. Gurung children have not obtained such facilities.

Gurung students did not get support to learn mathematic. The researcher found that respondent A,B,C and D had to be engaged in house work. They did not have enough time to study at home. Due to these responses, they were absent in school. Teachers didn't ask these types of student about their home environment. At home, they learned by observing and doing things side by side. But they didn't get chances as such in school. The everyday lives of Gurung students in home and school practice have been different. In school, they get theoretical knowledge like they have to use theorem to solve different problems. But they work in their home making alcohol, Gundhri mat (Goniar) Khurpa and using hand. Ekbitto, ek hat, ekgaj etc. Also they

have to rely on traditional units (mana, pathi, paseri, muthi, dharni, bita etc.) Which is used everywhere in the society. These discontinues between everyday life and school practices make Gurung students incomplete on learning mathematics. so, they felt difficulties to learn mathematics simple problems like HCF, LCM of algebraic function, word problems, multiply by minus sign, construction of angle, parallel line, parallelogram, circle, theorem, triangle are min difficulties. Vygotsky's says every child learns from society from social contact with home, family and universe. Gurung students felt difficulties in learning mathematics. Due to some of the cultural discontinuities between home and school, the things have not been supportive for learning mathematic for Gurung students.

The Gurung students leave their own family culture outside the school and inside the school that is different from their home culture. Because of this difference in the home and school culture, many students struggle to learn mathematics that is even more decontextualized from their community and the issue of native language, issues of traditional curriculum. So, they are all cultural matters that are more or less liked with social aspects too.

Finally, researcher found that culture of Gurung at home and school were unmatched. The school is very bad in structure. It has not managing classrooms and office too. After earthquake 2072-01-12. It has not building and only stay in TLC with roof of tin. So many Gurung students failed in mathematics. The home and school environment of Gurung students were not favorable for learning mathematics.

Parents Education and Economic Condition

Gurung are always kept away from opportunity by state. Most of the Gurung people of parental generation are uneducated person due to the lack of knowledge. They do not know about the important of education. So they are engaged in the same

work like making alcohol, met(goniar), Gundri and bring firewood and grass etc. It developed work transmission from mother to daughter and father to son. This process is also help to transfer from generation to generation. Gurung children learn and develop away copy with situation and task and particular method of caviling style to the best situation. For example, most of the Gurung students' traditional measurement tools like EK hat, Ekbita, Ekgaj, mana, pathi, paseri, dharni etc. In their house. In school, students used special or standard measurement tools like kilogram, gram, kilometer, centimeter etc. Measuring instruments like protector, scale, compass etc. There are discontinuities between traditional practices and modern practices. Hence, according to the theory of cultural discontinuities, there are discontinuities between, home and school environment. So Gurung students feel difficulties in learning mathematics.

The searcher asked Gurung students. Parents and head teacher on the topic "How do parent's education and income affect their children's education?"

1. *"We can't afford for the education because our income is low for food and clothing".(parents)*
2. *I am illiterate and the children do their homework themselves at home".
(parents)*
3. *"Education has no special significance for daughter since they have to do the household work after marriage." (parents)*
4. *"I think this education would not play vital role in individuals learning. I expect my son could take some occupation as soon as possible by leaving school. It would be far better if he can be making Khurpa, Gundri, alcohol and other work."(parents)*
5. *"my parents can't afford to pay for school fee."(Student)*

6. *"We have to go to work to earn money for food clothing and education".Student)*
7. *Gurung students have to earn pocket money themselves. So, they focuss on wage earning jobs rather than study".(Head teacher)*
8. *"Gurung parents are often illiterate hence they don't show concern about their children education is the major factor to improve their children's study."(Mathematics teacher)*

From the above views, the researcher found that the Gurung students failed in SEE in mathematics because of the extreme poverty, they faced in everyday life. Most of the Gurung students have faced difficulties for hand to mouth problem. So, Gurung students did not do their homework regularly. Due to lack of guidance of parents and sufficient tie time at home for mathematic practices, they become weak in mathematics.

Occupation of parents and mathematics learning

`Most of the parents from Gurung community are involved in Agriculture so they don't care their children whether they are studying or not. If they take interest by simply asking about wages they expense while farming, then matter of math comes but they don't do so.

The table given below shows the people from Gurung community who are involved in different occupation.

Table 4.1: Occupation of parents

Occupation	Involvement
Agriculture	80%
Labor	15%
Business	3%
Other	2%

This data is taken from Sulikot rural municipality ward no 7, office.

Educational background of the family and mathematics learning

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

Table 4.2: Educational background of the family inhabitants of Village

Education	Percentage
Bachelor	3
Intermediate or 10+2	5
SEE	10
Literate	15
Illiterate	67

The above data and view indicates that most of the Gurung students were from uneducated family and low economic background and they have not given the sufficient time at home for mathematics learning and doing homework and other practices. Gurung students were not getting expected interest in mathematics. The parents do not guide them in house and always avoid taking responsibility to provide

educational environment in the home. The above data also shows Gurung students did not do homework regularly in mathematics, due to lack of sufficient time at home for mathematic practices. Indeed, mathematics need more practice to achieve good marks but they didn't give enough time for practice and they didn't take the tuition class because they have no enough money.

Learning Environments at School

School is the second home of any child. The teachers, students, and parents are the component of the school. School environment reflects belief and tradition of the school community delineating the relation among, students and teachers. Scholarship to the students, extra class provided, appropriate teaching method and equal chance for boys and girls in all activities are the major aspect of school environment (KC,2009).

All the activities which are conducted in the school came within school environment. It is one of the components to total educational atmosphere. However, school is considered as second home of any child where the teachers. Students and other staffs play the role as the family members. and the teacher's guide controls and provides information about the books and the current time. The school has to maintain the rule and regulation of the school period. No matter how the school environment, it has deep relation with society. The social environment advisers to the school environment. If the social environment maintains the educational environment in society, then the school environment becomes medium for students to learn about the current knowledge.

"The school has not enough teaching materials for mathematics and other classes. Also the school future plan is to manage required materials some computers for teaching and add more books in the library". (Head Teacher)

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

"Teacher gives homework daily but checks it as the end of unit. If we do not complete the homework, then he beats us but never check in classroom. The teacher checks in after a long time".(Students)

This shows that there is lack of continuous assessment in school. The teacher slowly punishes so the students had negative attitude towards the mathematics teacher. In this connection UNICEF (ISSSS) states that there is simple research showing that students are quicker to learn to read and acquire other academic skill when first taught in the mother tongue. The data shows that the Gurung students do not understand second language adequate while teachers teaches in Nepali. The second language hinders to understand an idea about mathematics which becomes a poor interaction with teacher and Gurung students.

Teachers are using students centered 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 class work regularly are the main problems of teaching Gurung students.

Local Language and Mathematics Learning

Language is the one aspect of the learning environment of Gurung students at school. Language is the greatest means of human civilization that sets them apart from the 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 major component for learning when the researcher observed, it was found that language was

a factor of misunderstanding for Gurung students and also between teacher and Gurung students.

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

"We understand clearly math teacher teaches in our language."(Students)

"We want good teacher who are clear in mathematics and language, can give examples related to Gurung culture."(Students view)

From the above view indicates that most of Gurung students feel uneasy to speak and understand Nepali as well as English language. UNESCO (2009) stated that at elementary level instruction through home language have psychological sociological and education strategic. 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 educational, psychological and sociological import on their study. The response of teachers and students as given above proved that the problem of language is for communication. From the above views it showed that the Gurung students are poor in Nepali language. They spoke their own mother tongue at home. The language of Gurung was not matched with the school language so language is major fact for creating the difficulties in learning mathematics of Gurung students.

Episode

"In an observed class, mathematics teacher went to the class and then after the research also entered in the class, with him entire students stood up and told good morning sir! The teacher also wished morning and told them to sit down. It was

noticed that the school environment has taught them about the respect for the teacher. There were thirty-two students in the class. Teacher said, "Open your book, please" and he wrote the topic indices. He wrote a problem on the white board and solved that. All the students were busy to copy the solution from the whiteboard. The teacher did not review the previous lesson a related topic for indices and didn't check the homework. After sometime the teacher asked with the students, whether you understood the lesson or not. Some students said, "yes sir!" but one of the Gurung student asked with teacher in own language. Teacher didn't understand his language and teacher asked him, "What do you mean?" and also do not use your own language, it is school not your home. After this incident, other Gurung students did not try to ask again about their problem. They got much depressed and sat on the bench. Again, the teacher repeated the problems on the whiteboard and the situation was the same. Then the class is finished.

From the above classroom observation, the activities of mathematics teacher and Gurung students showed that, Gurung students use their own language in school but teacher uses Nepali language in classroom but teacher could not understand their language. There is language problem between teacher and Gurung students. It is the main problem for learning mathematics to Gurung students. Hence, it is concluded that language creates the difficulties in learning mathematics.

Teacher-Students Interaction

Interaction is a social activity. Interaction may be within person or a group. Interaction refers to the mental activity with his/ her mind and soul. It depends upon the person intellectual capacity. Interaction between persons may be symbolic or code language. Interaction brings the maturity in learning. The way of teacher directly

effects on the learning mathematics of the students-teacher behavior teaching method practices application of the subject of teaching learning methods.

In these study teachers, students' interactions mean the relation of Gurung students with mathematics teachers, head teacher and other students of class. In observed class, researcher found key respondents were silent in the class. The researcher asked questions with them, "Why are you silent in class?". They simultaneously said we like to be silent sir. In case of respondent-A is afraid of asking question to teacher. He feels problem to ask question in the class due to his improper language that the teacher doesn't understand and become angry. Gurung students were afraid of asking question in the class. They felt difficulty to ask questions with the teacher due to language problem. It made to sit silence either they understand or not understand.

Episode

The teacher entered into the class with the teaching materials and researcher also entered in the class with him. He reviewed started to teach. He wrote the topic construction of parallelograms standing on the same base and between the same parallel links are equal in area? He reviewed the previous lesson on that one of the researcher respondent asked question with the teacher from the previous lesson in their own language. "Sir humhishabambujhadhi". teacher said if you want to ask question to me, ask in Nepali language. Do not use your language. The student was quite serious. The teacher constructed a parallelogram on the white board using geometry box. Then teacher asked some questions with students. He further constructs another parallelogram. Teacher asked with, "Did you construct parallelogram?" One of the student said, "Nai sir!" Teacher did not care him. The class was finished and the teacher gave homework for remaining questions.

From the above observation, it seems that there is not proper interaction between teacher and Gurung students. And also the teacher did not use the student centered learning method. This observation shows that students participation was poor and not achieved in equal learning experience. It can be concluded that from the observation of classroom the teacher mostly used lecture method. Though, sometimes I found him with using problem solving method but it was not sufficient. The classroom environment was authoritative. The class lacks students' friendly environment. Thus, it can be concluded that traditional type of lecture method is one of the cause of poor learning in Gurung students.

Framework

Nepal is patriarchal structured country. It seems that women are not given equal position in the society by males and they are in continuous issue for the equal right. In Nepalese society, there is believed that son looks after parents in their old age are given more priority. Daughters are kept within the four walls of the house. Specially Gurung faces discrimination although son and daughter are uneducated.

The researcher found that in Gurung society there are great differences existing between son and daughter. They learn to do household work to bring grass and firewood is only for girls, they also think that it is only the task of the girls. Gurung women are forced to accept discrimination and difference. Gurung girls are forced to do household work, take care of small sisters and brothers because their mother has been doing it, so they have to do it. Their mother thinks that daughters mostly do household work. It is her duty to finish all the works of house.

"Education has no use especially in daughter life since they have to do the household work after marriage." (parent's view)

"I think this education is not for us. we are poor people and our children cannot read or write as other rich people children can do. It is enough if they know their simple calculation and simple reading and writing skills. Therefore, I expect some occupation. It would be better if they can join farming". (parents view)

"I think education has no great significance. So I don't send our children to the school. Moreover, our girl's children generally have to work indoor in our community. Another thing is that the girls are not allowed to do outdoor activities. There is an inborn concept about the girls that they should not be send in the outdoor activities because they cannot do. So, I think that girls would do only household activities outside the home".(parents view)

"According to the Gurung parents, it is clear that parents hold discriminatory attitude towards their daughter. They encourage their sons more than daughter for study. That is one of the causes behind difficulties faced by Gurung students in learning mathematics. But we never discriminate between boys and girls in school".(Mathematics teacher)

From the above responses, there is psychological factor which has greatly contributed to the learning difficulties of Gurung students. The Gurung parents have been convinced that education cannot do any good to their children. This has prevented them from building up their confidence. This ultimately affects their children's performance level in mathematics. The social practices that encourage people to send the daughters to household work and sons playground are the outcomes of the systems that unequally ensure discrimination between sons and daughters. Even though this practice is prevalent in other communities in our society as well, it is rampant in Gurung poverty. So, Gurung parents and guardians fail to motivationally encourage their daughters in learning process.

There is extreme form of illiteracy and ignorance in Gurung community. This has prevented them from changing their mind set. So they have strictly followed and continued social practices. The sons get inheritance right to the paternal maternal properties whereas daughter are considered as an 'object' for giving away to other people's houses for domestic work. Sons are regarded as important family supporter on the other hand, daughter are regarded as the workers to be engaged in their husband's home. Such behavior of parents creates much difficulty in learning process of mathematics for Gurung students. Although the parents give more importance to boys than the girls, they have not shown much interest for their daughter's study, which has caused difficulties in learning mathematics. On the whole, the parents think that their children cannot achieve anything such as getting job or any good work, which makes them feel that education holds no significance in their children's lives. The mathematics teacher remarks that even though the Gurung parents had discriminatory attitudes towards Gurung and non-Gurung children and males and females, mathematics teacher treated every student equally and impartially in the school.

Irregularity

Irregularity is one of the main problems of Gurung students in learning mathematics. They are compelled to attend their school after the completion of their Household works. The school is priority second because their first priority is to manage food for survival. They have to be engaged in carrying firewood, patteri, kharabi from near forest and working at other houses. It shows that they are usually irregular in their school. From the data provided by the school. Gurung students in mathematics were found as follows from the table:

Table 4.3: Attendance

Name of respondents	Attendance day (in a month)
Respondent A	12
Respondent B	15
Respondent C	8
Respondent D	10
Respondent E	8
Respondent F	9
Respondent G	11

Source: Shree Siddharth Secondary school SulikotGaupalika 4 Barpark Gorkha

The above mention data present that their attendance in their school is measurable. It is concluded that their irregularity in school is very high. Due to this they feel difficulties in learning mathematics.

"I am not regular in the class at school due to household works. I can't understand some lessons of the missed classes. Other causes behind not understanding the lessons is language. Due to these reason, I can't solve and complete assignment given to me in the school. There are many members at home but a few members are capable of earning. It is very difficult to survive in life. We have to face difficulty in buying books and copies. Then, I am afraid of getting punishment and give up the desire of going to school."(student)

"It is so difficult for each student to perform well due to their irregularity. Student should be engaged in exercise after the completion of basic knowledge. But due to their irregularity in the class, we get confused whether to revise the lesson or initiate new exercise. Therefore, irregularity of student has also created problems and

they can't proceed forward in learning. Thus, Gurung feel that mathematics is very hard subject"(mathematics teacher)

"There is great impact in learning mathematics because of their frequent absence, we made great effort to make them regular in the class but we could not succeed completely. The main reason behind is that Gurung parents are uneducated, lack of positive concept towards education and poor economic condition are the factors which have played big role in the irregularity of the Gurung students are after getting information about daily life, I concluded that, their students can't be improved until they are regular". (Head teacher)

From the above responses of Gurung students and the head teacher, the researcher concludes that there is very irregularity of the Gurung students in the class. One of the reasons behind the difficulty is that students have not been punctual as they have to work for livelihood. The students said that as there are many family members in his family, it is very difficult to manage food for survival. This justifies that is a great problem in learning mathematics. The study also shows that many Gurung students have lost their interest to go to school because of poverty. In this regard, the mathematics teacher also accepted the fact that low economic condition, work load at home, language and fear of punishment from teacher caused the students unpunctuality in the class at school. Therefore, such irregularities have created the great obstacles in mathematics. Similarly, the head-teacher agreed with the mathematics teacher that unless the Gurung students were regular in the class, their performance would never improve.

Lack of Parental Involvement in the School

Respondents parents did not frequently visit the school in any functions and any time with any comments on teacher's side and their children's side about the

educational materials. In a study by Keith and Keith,(1993), they found that family from all socio-economic levels should be involved with the children's educations at home. However, families with of higher socio-economic status tended to be more involved at school.

An interview with head teacher revealed that respondent's parents rarely visited their children's school not even once a year tried to know about their educational status. Parents of one of the respondents spoke out outright that the school should be responsible for their children and parents' future expressed that, they even don't know their teachers and even don't have enough time to allocate to visit the school due to socio-economic condition.

The parents' involvement in the life of school turned out to be positive influence upon people progress and development. Thesis included, help in class room and educational visit, attendance at meeting to discuss children progress (Poland and Bourne 1994). The parental involvement in people's education development within the home is also clearly beneficial. Parents who motivated their children to read and learn and provided them with extra material and books at home had positive effects upon their children's learning. Parents and teachers meeting concluded in the school that lack of presence of student clearly signifies that teachers seemed less responsible towards students. The essence of maintaining reciprocal relationship among teacher and parents normally lead towards betterment in teaching learning procedure. But communication gap makes teacher less accountable towards their responsibility. Concerning the learning opportunity for the children at school and at home, learning environment was not conducive for learning mathematics.

Studies have shown that parental involvement directly affects their children mathematics achievement (Sender and Sheldon, 2009, yan and lie 2005). Students

with parents are involved in their education are more likely to perform better in mathematics and achieve more than other students. Sirvani 2007 agrees with this and claims that parental involvement contributes significantly to the achievement of both primary and secondary school students in mathematics. In addition, these students are more likely to continue further in mathematics (Sheldon,2009). Yen and Lin, (2005) also claimed that the higher expectation parents have for their children more than children, the better results we have mathematics achievement.

Lack of Belief and Support

Parents belief has a significant impact on students' mathematics achievement and attitude towards mathematics(fan and chen2001. Aunola et al,2003). Parental aspiration and parent's attitude toward mathematics have been identified as having a significant impact on student's participation in advance level mathematics and student's achievement in mathematics.

Parents of respondents hold a dogmatic notion that cannot pay and good for them and seem lacking confidence towards their children that could do better in their future. One of the respondent's parent revealsthat "we have not noticed any individual from our cast doing good after completion of high school education. So we prefer our children to do some household work such as farming, Goniare making labor works etc."

Although some of the respondents were found to be interested to go to work, they were frequently absent at school. Students think school can't support and improve their daily life. for example, one high school graduate candidate from Gurung community is not involved in any good occupation. So, the parents encourage children to engage their children in their own parental occupation like alcohol, making, dalo making and in labor activities. This dogmatic and traditional thought

leads the children to develop inferiority complex and it makes prone to them as lacking confidence in solving technical subject like mathematics.

Government and non-government agencies didn't provide scholarship to the respondents. They didn't get any financial supports or other educational support and incentives from any agencies. While observing all this, the researcher found that school didn't have the provision to support students to provide scholarship and boost their mortality. Parents feel extra burden to provide school dress and educational material to their children and school has also overlooked such problem which has somehow deteriorated their mentally whether to continue their education or not. The students feel inferior among their peer groups and can't make progress in their education due to lack of concentration in subject matter. In this way it is the next determining difficulty in learning mathematics for Gurung students.

Teaching Learning Process

Teaching learning process is the major factors in learning mathematics. Teacher's education and expertise determine the teacher qualification.

Mathematics is a practical subject. It can be solved by different process and techniques. The way the teacher directly makes effort on the mathematical teaching the students and teachers behaviors, teaching method, practical application of the subject of teaching learning methods are various forms of teaching learning process.

The experienced teacher makes his/her students to understand thing in simple and clear way. A trained teacher can attract and motivate the students towards the mathematics with the help of different teaching skills regarding teaching learning process. A trained teacher can use rightly and appropriately the teaching material and makes the teaching learning easy and interesting. As mathematics is practical subject, its use of teaching material is necessary in the study of this subject. If we can't use

appropriate method, then the teaching learning process can't be effective in mathematics teaching. There are so many methods being used such as discovery, problem solving, discussion, experimental etc.

When the researcher visited in the field, he found that the English teacher teaches mathematics, no experience of math teacher. There was problem on the part of mathematics teacher and there was problem of math teacher and teaching materials because this school is situated in hilly place.

" I often used student centered method as well as explained the problems steps by steps. But school has problems of availability of teaching materials. We have not sufficient teaching materials as we need. But our school usually promotes the student participation for teaching in the classroom." (Mathematics Teacher)

This statement shows that there are some problems regarding the use of appropriate methods, lack of teaching materials and teacher's knowledge of teaching methods.

Interest of learner influences the teaching learning strategies, achievement strategy and achievement of students. When man grows up and develops, the area of interest is being increasing. Interest depends upon the individual, some are interested in mathematics then he/she gives enough time to study mathematics and ultimately gets good achievement in this subject. But if the students regard mathematics as a hard subject, they can't solve the problems and they don't take more time for this subject.

"I feel mathematics is a hard subject because of lack of practice. I mostly do household works at least 4-5 hours per day."(Student's view)

"They believe that mathematics is a difficult subject. This belief prevented them from taking a general concept on the mathematics as a subject." (Mathematics Teacher)

The interview with the students proves that even though the Gurung students tell that their poor performance in mathematics has resulted due to lack of practice at home. It is the psychological fear which has really made mathematics a difficult subject. So, the researcher agrees with this view that this fear has prevented the Gurung students from taking a simplistic or general view on the mathematics as a subject in the school.

Chapter-V

FINDINGS, CONCLUSION AND IMPLICATION

After analyzing and interpreting the data, the researcher has tried to summarize, draw findings, and derive conclusion and recommendations based on the finding of the study.

This chapter includes the finding derived from the analyzing and interpretation of the previous chapter and the recommendation of how these findings can be used in the academic field. The first of this chapter summary of the study, second finding of study, third describes conclusion and last section present recommendation based on the finding of the study.

Findings of the study

From this case study the causes of the difficulties faced by Gurung students in learning mathematics are found in the following major points.

1. Lack of learning environment at home and school.
2. Lack of parent's education and economic condition.
3. Language difficulties to understand Nepali language.
4. Less teacher's and students' interaction.
5. Gender discrimination.
6. Irregularity
7. Lack of parental involvement in the school.
8. Lack of believe and support.
9. Teaching learning process.
10. Gurung financial condition is not strong to send their children at school and afford them in their further education. Most of the parents are illiterate and

their children are used as the means of earning money for their simple livelihood.

11. Because of the economic condition and lack of positive concept about the education of their parents, the students are irregular in the school.
12. There is a discriminatory behavior between son and daughter.
13. There is lack of interpersonal relation between Gurung student and mathematics teacher.
14. There is a discontinuity between practice of mathematical concept at home and school.
15. Gurung students have used their mother tongue at home and Nepali language as the second language which is never used in his/her home. There is language discontinuity at home and in school.
16. The school has not provided scholarship and financial aid to Gurung students who were economically and most talented.
17. Lack of parents-teacher meeting is also another problem. There are highly qualified teachers but not aware about it.
18. Home environment, language, economic condition, irregularity in the school and interpersonal relations are the major difficulties in learning mathematics of Gurung students.

Conclusion

Regarding the conclusion, the researcher derived from the field work in Shree Siddharth secondary, Gorkha that Gurung students are very high in numbers in the school but very low numbers of students passed in the SEE. Most of them failed in mathematics subject as they were mostly absent in the class. According to

mathematics teacher, students are poorer in learning mathematics. From the study, the researcher draws the following conclusion.

1. Language plays the vital role in learning mathematics. Due to the lack of proper understanding of the language, it has created the difficulties in learning mathematics.
2. The culture also plays vital role in learning mathematics. Due to unmatched culture at home and school, students' difficulty level has arisen in learning mathematics.
3. The learning environment plays vital role in better performance in learning mathematics. The lack of proper environment at school has created the difficulties in learning mathematics.
4. The economic condition of the parents has been poor. In addition, there has not been favorable learning environment for student at home, and there has been no awareness program of parents, students have not been provided any extra classes in the school.

Implication

Gurung parents don't take much interest in how their children are learning. They should be aware about improving the education of their children. To raise the mathematics achievement of Gurung, different awareness and opportunity should be made available. This research is not complete research. There is limitation of this research. However, after the analysis and conclusion of the study, the research has made the following recommendations for further study to validate the findings of the present study.

1. Teacher of (Mathematics) should be modified with modern techniques for teaching that subject.

2. NGO/INGOs conducting educational activities should lunch their programs in that area.
3. Extra activities related with math subject should be given top priority.
4. The school must manage free extra classes and tuition, calling the expert of math subject.
5. Frequent meeting with parents, SMC and math teacher is compulsory.
6. This study was done only in Siddhartha Secondary School Gorkha as a case. For the generalization of result of the study, similar study should be done in large samples.
7. The study of these kinds should be conducted at all levels of schools and other subjects as well.
8. Similar study can be carried out in private schools.
9. Similar study can be carried out for different branches of mathematics.
10. Similar study can be carried out in another special community.
11. Similar study can be done on the causes of school dropout problems of Gurung students.
12. As this study has been conducted on learning difficulties in mathematics faced by Gurung students, it can be helpful to explore learning difficulties in other caste groups such as Tharu, Chepang, Rai etc.

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Appendix-A

Interview guideline with key respondents

Name of student:

Date

Class:

Roll no:

Age:

Gender:

Position in the class:

Name of school:

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

- 1) Family Background.
- 2) Personal history and Interest:
- 3) View about the learning environment at school and home.
- 4) Relationship between teacher and students.
- 5) Reading opportunity at home.
- 6) Homework and class work.
- 7) View about the mathematics and teacher.
- 8) Causes of difficulties in learning mathematics.

Appendix-B

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.

- 1) teaching strategies/Methods.
- 2) Problem on teaching Gurung Student.
- 3) Encouragement provided to the students learning.
- 4) Participation on the class.
- 5) causes of difficulties in learning mathematics.
- 6) Cases of difficulties in learning mathematics.
- 7) Effects of culture and language in learning mathematics.
- 8) Relation with students.

Appendix-C

Interview Guideline with Head teacher

Name:

Date:

Qualification:

Sex:

Experience:

Address:

Name of school:

Training:

The interview with the head teacher had been taken based on following main topics.

- 1) Learning environment in the school.
- 2) Student and teacher relation.
- 3) Student learning opportunity for learning mathematics.
- 4) Training for mathematics teacher.
- 5) Difficulties things for Gurung students at school.
- 6) Problem of teaching of Gurung student at school.
- 7) Participation on individual/group of Gurung students in the class.
- 8) Effect of culture and language in learning mathematics.
- 9) Factors that influence the learning the learning of mathematics of Gurung student.
- 10) What technique do you use minimize such types of problem.

Appendix-D

Name:

Date:

Age:

Duration:

Education Status:

Gender:

Address

The interview with the parents of key respondent had been taken on the basis of following main topics.

- 1) Economic toward condition.
- 2) Behavior towards child at home.
- 3) Environment at home for learning.
- 4) Child's Interest.
- 5) reading/practically opportunity at home.
- 6) Physical faculty for learning.
- 7) Expectation from school.

The End.