

Chapter- I

INTRODUCTION

Background of the Study

The word “mathematics” itself derives from the ancient Greek (mathema) meaning “subject of instruction”, that means “ to learn”. A famous mathematician John Luck defines the mathematics as “mathematics is a way to settle in the mind a habit of reasoning” it is the way of thinking, way of organizing, way of analyzing and synthesizing a body of data. Nowadays no one can do anything without use of fundamental process of mathematics in daily life. As we know mathematics is nothing other than rigors aesthetes of series of definition, example, theorem. Mathematics is an interesting subject and can nurture creativity in life. However, students think that mathematics is not interesting and meaningless subject. Students feel anxiety, worried and nervous to learn mathematics. Furthermore, students perceived that mathematics is a difficult subject due to lack of mathematics laboratory and ineffective teaching method that is not related to real life and real world situation (Ali et al., 2010; Cazzola, 2008). Moreover, many schools are more focused in their performance to achieve excellent examination results, specially in the public examination. As a result, students focus on the examination without understanding the concept of real mathematics.

National Higher Education Commission (NHEC , 1998) has given important for the improvement of school level education curriculum, teaching method, teacher background, teaching material and teacher training. In 1969 government of Nepal lunched “the equal access for women to educational program” to increase the girls enrollment in primary school. The gender parity index (GPI) in Nepal education

record (NER) at primary, lower secondary, secondary and higher secondary levels are 0.99 ; 1.02 ; 0.99; and 1.03 respectively (Flash I Report, 2071).

In Nepal mathematics is compulsory subject in school level where as it is optional subject in higher level. We can see in exam more than 80% students failed in mathematics according S.L.C result on 2071. The students those who are weak in mathematics in higher level, definitely they must be weak in primary level.

Nepalese society was ethnically diverse and complex in early 1990's , ranging in phenotype (physical characteristics) and culture from Indian to Tibetan. The varied ethnic groups had evolved into district pattern overtime. The major two groups in Nepalese society are Tibetan –Burman or Mongolia's from the North and the Indo Aryan from the south. There are many ethnic groups of Magars, Gurungs, Sunuwars live in the eastern mountain observing their own culture and speaking their own language. Sherpa ethnic group inhabited in the Northern Himalayan region are influenced with the Tibetan culture. Newar ethnic group are famous in Kathmandu valley having own culture and language. The ethnic group of Tharu, Maithili, Bhojpuri, Danuwar etc. live in Terai region .Brahman and Chhetri also play an important role in Nepalese society.(Bista,2004).

The Newa (Newa Bhasa: Newa(h), classical Nepal Bhasa: Newar or Newal) or Newar are the indigenous people and the creators of the historical civilization in Kathmandu Valley. The valley and surrounding territory have been known from ancient times as Mandala ,its limits are ever changing throughout history.

Newars have lived in the Kathmandu Valley since prehistoric times and immigrants that arrived at different periods in its history eventually merged with the local population by adopting their language and customs.(Bista,2004,p.19) Newars are linguistically and culturally similar to Tibeto-Burman and some Indo-Aryan

groups . They are bound together by a common language and culture. Their common language is Nepal Bhasa (“ Newari” according to statistics of Nepal) or the linguistic progenitor of that language.

These groups are originally from the east Nepal and now inhabited in most of all parts of the country. Tamangs live outside the rim of Kathmandu valley. The Thakali inhabits in the North part, upper Kaligandaki river. Apart from above, they are tied up together by their common ideas of peace and nationalism.

The main ethnic groups in Hilly region are Newars , Brahmins ,Chhetris, Tamangs, Sherpas etc. The Newa (Nepal Bhasa): Newa or Newah , old Nepal Bhasa: Newar, (Newal) are the indigenous people of Nepal’s Kathmandu valley. Newars are linguistically in relation with Tibeto-Burman and Indo ethnicity /race ,bound together by a common language . The term near applies roughly to the descendants of citizens Medieval Nepal(consisting of Kathmandu valley as the capital and the territory ever changing with farthest extent being Gandaki river to west and Koshi river to the east, Tibet to the North and terai in the south).

The Newars speak Nepal Bhasa, a Himalayan language of Tibeto-Burman branch of the Sino-Tibetan group. It has been incorrectly called by the term “Newar” by westerners and non-Newars of Nepal. It has been known as Nepal Bhasa from the very beginning of history of Nepal. According to the research findings on this language it is provided that Nepal Bhasa shares the features of Kirant and Tibetan dialects of Northern Himalayas. The colloquial term used by the native speakers is Newaah Bhaaye. It consists of five major dialects and several sub-dialects spoken by Newars living throughout the country.

Out of the three main cities of Kathmandu Valley which are historically Newar , Patan is mostly Buddhist consisting the four stupas built by the Ashoka,

Bhaktapur is primarily Hindu where as Kathmandu is mixed . Generally , Newars are both Hindu and Buddhist celebrate many festivals .However, for ritual activities , Hindu and Buddhist Newar have their own priest and cultural differences.

Newars are urban people with farmlands and farmhouses located on the outskirts of the cities and towns. Although it is widely believed that Newars are native of Kathmandu valley only, there are significant historic Newar settlements outside the valley where Newars still have large population. Some of these are in Kavre district , Dolakha , Sindupalchowk in Tatopani (on traditional trade route of Tibet), Chitlang ,Tistung etc. Some of the Newar businessmen were settled in Gorkha(called Gorkhali) by the kings of Gorkha to improve the economy of Gorkha. Many Newars used to trade with Tibet and used to have permanentships in Tibetan market. After the unification of Nepal ,Newars have moved to Palpa, Bandipur,Pokhara, Biratnagar,Hetauda ,Birgunj, Nepalgunj ,Bhojpur,Ramechhap, Baglung and other new settlements.

So, in our school there are the students of Newari culture. Our classroom is the reflection of the societies. There are various problem in learning mathematics in the culturally diverse classroom unless and until we can not identify the problems of Newar children to learn mathematics and we cannot solve it. The solution to address the problems of Newari students to learn mathematics. Many problems are occurring frequently. So, I decided to conduct a systematic study on the topic “Problems faced by Newar children in learning Mathematics at Primary level”.

Problem Statement

Participation in mathematics education is an important dimension to access the development of a society. Mathematics is the primary root of education system. Education develops the human resources, which are interpreted as a process of

increasing the knowledge, skill and capabilities of all people in the country. But, in the context of Nepal, all people do not get the chance to be educated due to social, economical and cultural problem. Beside this, classroom dominated or cultural minority group face many problems, which directly affect the education system (Acharya, 2011). Our traditional concept, traditional teaching method play vital role for teaching learning process. In the culturally diverse classroom, what types of problems are faced by the Newar children in learning mathematics? Questions like these occurred in my mind, hence I am motivated to conduct the research on the topic “Problem Faced by Newari Children in Learning Mathematics at Primary Level”.

Objectives of the Study

The major objectives of this study were as follows:

1. To explore the problem faced by Newar children in learning mathematics in primary level.
2. To find out the major factor that affect learning mathematics of Newar children at primary level.

Signification of the Study

Mathematics is taught as an essential and important part of school level curriculum. It has been taught as compulsory subject at all level in school education system. Although, mathematics has been given an important place in the curriculum at all level of school education, it is believed that most of the students are weak, dislike and afraid of mathematics. Results of all student’s level shows that students are weak in mathematics .In the context of Nepal, teaching is more difficult and challenging because Nepal is multicultural, multiethnic , multi religious and multilingual country with a large number of students in a less facilitated classroom with different abilities. A classroom is the collection of heterogeneous group of

students of different interests, needs and attitude about different subjects matter. So it is too vague to choose appropriate teaching method according to students need, interest and capacity. Achieving targeted goal in the class room is hindered and obstructed by such heterogeneous classroom.

Every research has its own importance and significance. The present study entitled as “Problem faced by Newar children in learning mathematics at primary level” has the following significances:

-) This study helps to find how Newar students are facing problems in learning mathematics in primary level.
-) It would help to provide appropriate guidelines for Newar children in learning mathematics.
-) It would be helpful to the teacher to prepare and implement instructional strategies to find out the problem faced by Newar children in learning mathematics at primary level.
-) It would be beneficial to the policy makers, Educationists and mathematics educators to make further curriculum policies.

Delimitation of the study

- i. The study will be delimited to Kathmandu district only.
- ii. The study will be based on primary level Newar children who are studying either in public or private schools.
- iii. The study will be focused on motivational techniques promoted in learning mathematics.
- iv. This study will include few schools because of limited time.
- v. The study will be concerned with some educational aspects of teachers but not with teacher’s personality, social and personal aspects.

- vi. The data of this study were gathered through the classroom observation and interview schedule.

Definition of Terms

Heterogeneous people

People from different races, cultures, community consisting of many different kinds of people. Newar children are heterogeneous only in Kathmandu valley.

Problems

In this study significant problems are the difficulties faced by Newar children in learning mathematics at primary level, teaching in heterogeneous classroom, classroom management, content teaching pedagogy, instructional material and school administration.

Learning

Learning is the act of acquiring new or modifying and reinforcing, existing knowledge, behaviors, skills, values, or preferences and may involve synthesizing different types of information.

Newar

Newars constitute a community whose ancestral home is the Kathmandu valley. Only a few centuries ago, before the creation of modern Nepal, the valley was known as *Nepal*; and it has lent its name to the larger policy today known as Nepal.

Chapter –II

REVIEW of the RELATED LITERATURE

The review of related literature deals with the theories or research studies which have been conducted earlier. The literature review helps to avoid the duplication of the work and to synthesis the previous work (Acharya, 2011). The basic purpose behind the literature review is to identify the gaps of the research, develop the conceptual and theoretical framework. Some studies related to this area have been reviewed as follows:

Empirical Review

Acharya (2011) conducted a research study on topic “A critical inquiry of culturally relevance of primary level school mathematics education in Nepal”. He rises the research question: “Do the contents of primary level mathematics curricular material comprise the cultural group math?”, “How do the teachers use teaching strategies in the multi culture classroom?”, “What are the problems faced by teachers and students while teaching-learning mathematics?”. The main aim of the research was to examine the primary level mathematics education in Nepal from the perspective of cultural studies in mathematics education. The researcher used mixed research design. He concluded that the students have faced problem to learn mathematics because of the language. The students have faced problems due to colonized culture and develop mathematical anxiety. Centrally prepared curriculum makes teacher as the implementer and moreover they are handicapped and invite problem. In the multicultural setting teachers do not have the knowledge of pedagogy which brings problem in teaching learning process of mathematics. It was found that politics invited favourism and hence political activities need to be stopped in the school. Due to the centrally prepared document, the curriculum of mathematics in

Nepal is not inclusive, hence it bring the problems for teacher and students while teaching, learning mathematics in the classroom.

Lamichhane(2008) did a research on the title “ Mathematics concepts used by out of school children” (A case study of Tharu Children) with the objectives to find out mathematical concepts used by out of school children from Tharu community. The design of the study was qualitative and descriptive in nature. The researcher gathered information from interview, observation and life history of selected students. Four students were selected who were out of school for the study with purposive sampling techniques. She found her conclusion; due to their traditional culture, the Tharu cast is generally considered as a backward caste. In such community , the act of school children learnt different mathematical concepts during their household activities.

Poudel (2004) carried out a study entitled “Learning Strategies of Mathematical Concepts of out of School Children”. This study had been done by using qualitative research. The study concluded that different mathematical concepts were constructed in different situation as they were engaged in household works, farm works, other works and interaction between the member of family and society. The result also showed that thy acquired mathematical concepts through experience practice and scaffolding. It was also found that they learned by observing other’s work by hearing from the others and by repeating them. Out of school children learn counting, addition, subtraction and multiplication. But the concept of division was not quite clear to them.

Upadhaya (2001) did a research on “Effect of constructivism on mathematical achievement of grade five students in Nepal.” The research was conducted with three key words : Action, Reflection and Scaffolding. The main aim of the research was to

advocate and adopt constructivism in mathematics in Nepal. From this research the researcher concluded that the possibility of constructivism in Nepalese school was significantly different in achievement than conventional method of teaching.

Adhikari (2006) had done the study entitled “Cultural discontinuity and learning difficulties in mathematics; A case study of primary dalit school children”. The study aimed to identify the cause of difficulties in learning mathematics of Dalit children at school, to identify the influencing factors in learning mathematics for the Dalit children at school and to identify the impact of home environment of the Dalit children to learn mathematics at school. The research was done by using qualitative research design and tools were participation observation, in-depth interview. In this study, she concluded that caste system in Nepal appeared to be a focal point that has affected the everyday lives of people. It also affected their way of talking and behaving to other people, their relations, experience and perceptions towards other thing and people. It is the caste system that determines peoples’ everyday lives and their occupation. Similarly, children adopt different learning strategies. Caste system seems to be influencing factor for perception and thinking towards other people. The dalit have developed a dominated nature. In every field whether it is in the home/community or in school, they are dominated, humiliated and oppressed due to their culture and poor languages. As they do not match with other experiences and everyday lives in learning mathematics. Cultural discontinuity was the main cause of learning difficulties in mathematics.

The students who have same culture at home and school, they also felt mathematics as difficult subject. In case of dalit learning mathematics is challenging and more difficult process. On the basis of overall study and information provided by students, that they do not have same culture at home and school. There is

discontinuity between home culture and school culture. There is discontinuity between traditional measurement and modern measurement. These gaps create influencing factors in learning mathematics. Such as; interpersonal relation is not better, using vocabulary is not standard, there is discriminating behavior between son and daughter etc (Adhikari, 2006)

Rijal(2008) did a research on the title” The difficulties in learning mathematics of Rana Tharu students at lower secondary level” with the objectives to the identity the difficulties in learning mathematics of Rana Tharu students at lower secondary level. Study was qualitative and descriptive in nature. The researcher gathered information from interview, observation and related published unpublished documents. Only five children of Rana Tharu were selected from grade six with purposive sampling techniques. The researcher analyzed the data in descriptive way. He found the conclusion that there are mainly two vital factor that affects Rana-Tharu students in mathematics learning one is language dominance and another is cultural difference /discontinuity.

Hess (2006) in her book entitled “Teaching Large multi-level classes” discusses many activities that can be used in mixed ability classes. The activities are concerned with knowing students, motivating them dealing with written work, making students responsible for own learning, individualizing and personalizing.

Ghimire (2001) did a research on “A Study on the programmed condition of higher level education in Makawanpur district”. Crux of the problems that have been faced by higher secondary schools are different in management, lack of physical infrastructures, majority of part time teachers, vagueness in the role of governmental organization and lack of mapping, we can take other problems as well as the wider

development of these schools. They are lack of teachers training, educational tour books and teachers directories and supervision. Impractical process of fee, injustice in affiliation, lack of scholarship, irresponsible towards out activities lack of discipline, dissolve of certificate level from T.U, economically poor conditions of these schools are some of the major problems that are prevalent in Makawanpur district.

Attreya(2006) did a research on a title “ A study of problem faced by mathematics teacher to maintain positive discipline in secondary level classroom” with the objective to examine the discipline of students in mathematics classes at secondary level and to identify the problems faced by mathematics teacher maintain positive discipline in secondary level classroom. The design of the study was qualitative as well as quantitative in nature. The researcher gathered information from classroom observation and interview questionnaire for teachers, he analyzed the classroom observation result by using mean weightage and questionnaire through the related theory. He found the conclusion, the main problems are attributed by crowdedness of students in classroom, unavailability of furniture, unarranged seat planning, lack of proper teaching materials lack in enforcing school regulation, unsystematic teaching methods, poor evaluation of homework and classwork, limited co-curricular activities , punishment system, poor guidance at home ,ineffective family environment.

Shamoon (2014) research on the topic “Understanding the role of Mathematical Anxiety, Disaffect and Emotion in Learning and Teaching the subject of mathematics”. He concluded that, within this field of research ,the main approach towards the notion of disaffect has, until recently ,focused on measuring individuals attitudes, particularly mathematical anxiety. In light of how affect has viewed as a measurable variable and further distinguished as either cold and stable or hot dynamic ,a deeper understanding about the nature of negative feelings is necessary .In

this research ,he used qualitative research design with narrative study. So he found that, anxiety towards mathematics have been identified in many parts of the student teachers shared experiences and feelings, both in relation to the tendencies of the initiating survey, but also in the narratives from the individual interviews. However, anxiety was only one of the many different feelings expressed where fear, hatred and worry as well as enjoyment and excitement were also identified, sometimes in some narratives.

Theoretical Review

The theoretical framework guides and integrates the research study. It is the platform of research programme. It helps the researcher, how to investigate in the areas. My concern of the study is “Problem Faced by Newar Children in Learning Mathematics at Primary Level”.

Constructivist Theory

This study mainly related with the Vygotsky’s theory of constructivist approach to remaining mathematics. Vygotsky’s (1978) states every function in the child cultural developments appears twice first on the social level and later on the individual level. First between people intra psychology. This applies equally to voluntary attention to logical memory and to the formation of concepts. The objectives of Vygotsky theory are as follows:

1. To motivate learner to learn .
2. To emphasize on previous knowledge capacity for learning.
3. To emphasize on cooperative learning.

Conclusion

Overall review of related literature, cultural diversity is the major point in learning mathematics. Due to the different culture mathematical learning is affected.

Socio-economic factors, difference languages, school environment, home and school culture, different learning strategies, teacher's professional skills and knowledge are the factors which affects in learning mathematics. The cultural background is the main pillar of learning. From the above review of literature, what are the causes of difficulties in learning mathematics of culturally diverse students at school? What is the relation between culture and learning mathematics? And how to teach effectively in culturally diverse classroom? It is important to explore about it. But there was no such research to explore such problem faced by Newar Children in learning mathematics at primary level. There is a gap that the different cultural causes and factors on learning mathematics. So, through this research I am going to identify Problem Faced by Newar Children in Learning Mathematics at Primary Level.

Conceptual Framework

As discussed above related literature, participation Newar children in mathematics at primary level may depend under different variables. Generally participation students at primary level are influenced by the teaching leanings process, home environment, school environments, social variables, and attitudes towards mathematics ,language under teaching learning process, teacher qualification, interest of learners, exception of teachers, views and believes of teacher. This is presented below:

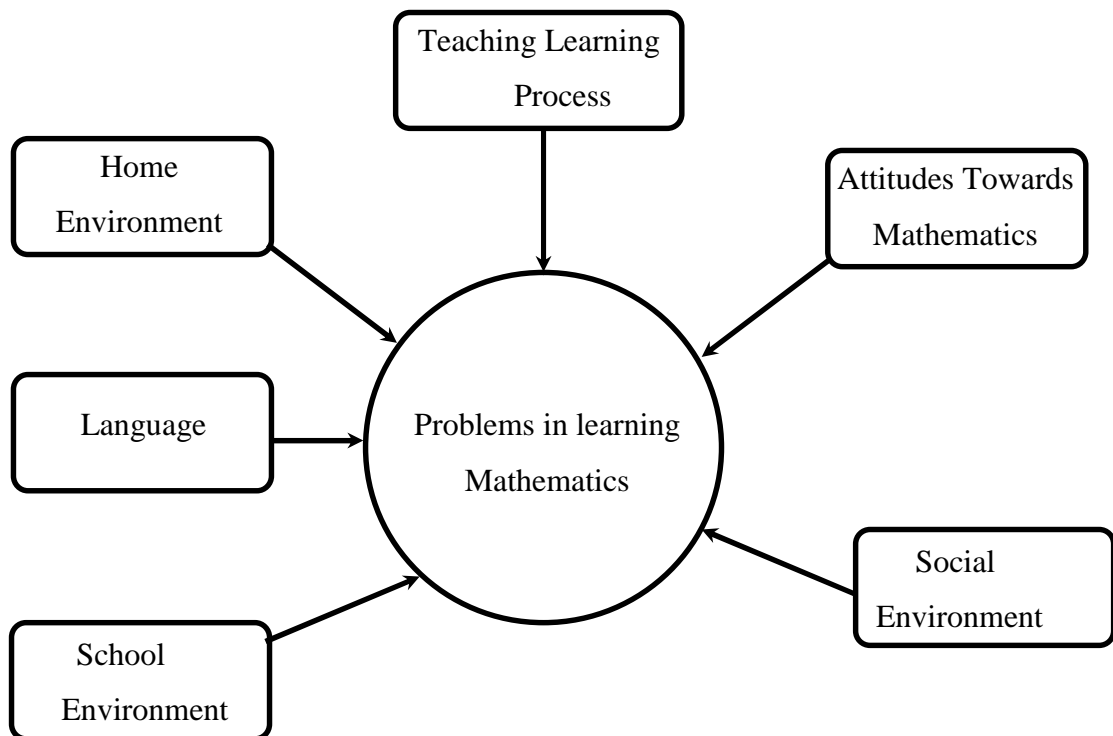


Figure 1: Conceptual Framework

No matter what type of class a student is in a class, if the student's attitude is poor toward math, then the student tends not to try as hard. Parents and teachers also play an important role in a student's attitude toward mathematics. "Parents' and teachers' attitudes toward mathematics and toward viewing their children as learners of mathematics affect the children's own perception of their competence and the value they ascribe to the domain" (Chouinard, 2008, p.130). Home lives, as well as social factors, affect how a student feels toward school. A teacher also affects how a student feels about certain subjects. If the teacher makes the subject enjoyable and the student feels successful in the class, then the student is more likely to have a better attitude toward the class and want to come to it.

After studying overall literature, researcher has found that no research has been done on the problems faced by mathematics teachers in teaching mathematics in primary level. Therefore this study was focused on Problem Faced by Newari Children in Learning Mathematics at Primary Level.

Chapter-III

METHODS AND PROCEDURES

This chapter includes the procedure of the study to achieve objectives of the study and to get answer of the research questions. Methods and procedures are connecting link to reality for the researcher without which the research cannot have logical conclusion. The research design of this study was qualitative. The study is concerned with the problems faced by Newar children in learning mathematics at primary level. In this section it describes the design , population and sample of the study , instruments data collection procedure, scoring procedure and data analysis procedure.

Research Design

The research design of this study was qualitative. Qualitative research uses multiples methods involving interpretation, naturalistic approach, to its subject matter (Acharya, 2013). Creswell (2008) describes quantitative research as seeking to measure while qualitative research is closely associated with inductive reasoning and is best suited for research problems in which the variables are unknown and need exploring. This study is about problems faced by Newar children in learning mathematics at primary level.

Selection of the Study Site

Bhanubhakta Memorial Higher Secondary School, Panipokhari, Kathmandu district is the research site of my study. The schools which are located in this area are providing education to Newar children. Kathmandu district has become a focal point for researches in the present time. Here different researches have been conducted about specific problems faced by Newar children in learning mathematics at different levels.

Sample

In statistics, a sample is that part of the population from which data has been actually collected. In my study two teachers of Bhanubhakta Memorial Higher Secondary schools and eight students were the samples.

Sampling

Sampling is the process of selecting a group of subjects for a study in such a way that the individuals represent the larger group from which they were selected. This is the qualitative research so, sampling of this study is purposive.

Tools of Data Collection

Research tools are the basic instruments to gather data, to seek possible solutions for observed problems. In order to find the answers of research questions, the tools of the study were the participant observation and in-depth interview are briefly described below:

Participant Observation

Observing in a setting is a special skill that requires addressing issues such as the potential deception of the people being interviewed, impression management, and the Potential marginality of the researcher in a strange setting (Hammersley & Atkinson, 1995; as cited in Creswell, 2007). To get required information I will observe the school overall as well as key respondents individually and collectively during their work at school, classroom, playing with peers, interacting with teachers, school and home behavior, family background, culture, participation etc.

In-depth interview

Interview is a two-way interaction between researcher and respondents as in the form of interviewer and interviewee in which interviewer creates situations that can attract the attention of respondents for enough period of time in asking questions

and answering the questions. In this study all the required information would not be possible to gather through observation and documents. To get in-depth information the researcher carried out the open ended interview along with unstructured and structured questions as well as observation. I took in-depth interview of all ten key students using unstructured questionnaires. After the observation and interview of the key students, I took interview of teachers who teach mathematics.

Quality Standard

My research cannot be judged exclusively by the quality standards based on positivism. Validity, reliability and objectivity are not appropriate for my research. In order to establish quality standard I followed the following points:

Prolonged engagement and persistent observation in the field

Guba (1981) lists prolonged and repeated participation at the research site as criteria for assessing the trustworthiness of naturalistic enquiries. This is to overcome distortions in the setting due to the researcher's presence and gain a complete picture. I spent five month in the field to complete my study.

Triangulation

Triangulation is the process of using multiple methods, data collection and data sources to obtain a more complete picture of what is being studied and to cross check information (Gay et .al., 2009) .Creswell (2008) adds that triangulation ensures the theory being developed has been investigated and observed from several different viewpoints.

Member Checking

Within a quantitative framework, researchers may not expect all participants to share the same perspective. Therefore seeking and presenting a balanced viewpoint is paramount . The process of member checking is to ensure that the researcher's

own biases don't influence how the perspectives are portrayed (Lodico et al., 2010). In other words, checking with the participants to see whether they agree with your interpretations made from the data. Members checking involves sending transcribed interviews or summaries to the participants for evaluation.

Data Collection Procedure

By using the classroom observation form, I observed the mathematics classes as the sample of the school. The observation was participatory. It believed that performance of the class was usual because I convinced them that the objective of observing the class was purely academic. The unstructured interviews were also taken with teachers and students.

I used classroom observation form and bases of rating motivational techniques simultaneously while observing class. And research interview schedule was used while conducting the interview with the teachers. The researcher conducted one model of classroom observation and interview together with research supervisor. The advance permission of the supervisor ensured the validity of the researcher and the research process as well.

Analysis of Data

The collected information at first was categorized according to the category of the respondents and different themes were taken in the text of interview and the observation note. Primary data was organized according to individual response in interview, observation. The collected data was analyzed with the help of different theories and literature mentioned in the literature review section.

Research Ethics

One area that needs careful consideration in any research project is ethics. Creswell (2008) contends the unique contexts of research require the researcher to

tailor ethical guidelines for each individual project. He adds that the ethics should be at the forefront of the researcher's agenda at all times. Research ethics are about being clear about the nature of the agreement you enter into with your research subjects. Ethical guide are about protecting the rights of individuals participating the study (Blaxter, 2006; Creswell, 2008). Individuals need to know the purpose and aims of the study, how the results was used and that they have the right to refuse to participate or withdraw at any time. Therefore one aspect to gaining ethics approval is obtaining informed consent from participants. Creswell (2008) also highlights the importance of respect for the site in which the research takes place. He puts forward that getting permission before entering the site shows respect.

Chapter IV

ANALYSIS AND INTERPRETATION

This chapter is related to the analysis and interpretation of the data collected from the classroom observation and interview. The data were collected from Newar students, interviews were taken, with teachers and students concerning mathematics at primary level. In order to achieve the objective or to answer the research questions. I processed the data and classified them into two different sections viz. Problems faced by students in the classroom and Factors affecting learning mathematics by Newar children at primary level.

Problems Faced by the Students in the classroom

The main focus of this study was to find out problems faced by Newar children in learning mathematics at primary level. So, the main source of information of this study was students and teachers of primary level.

The first objective of this study was to explore the problems faced by Newar Children in Mathematics classroom at primary level. To achieve this objective, observed classroom teaching of Bhanubhakta Memorial Higher Secondary School, Panipokhari, Kathmandu was observed. The information was collected for answering the questions related to the problems faced by Newar children in learning mathematics. The main tools used to achieve this objective were observation form and interview guidelines. The data obtained from the study is given below.

Classroom Observation

Bhanubhakta Memorial Higher Secondary School, Panipokhari, Kathmandu

I observed two mathematics classes in a day. For that, I observed grade IV and grade V and required information was collected from the classes to trace out the condition of the teaching learning activities in the classroom.

Episode one

I observed the classroom of Bhanubhakta Memorial Higher Secondary School. I found that the size of the classroom was favorable for the students and the set of furniture was sufficient .



Three students were sitting at one bench.

The rooms were clean and tidy. The blackboards were replaced by white boards in classes.

My first observation class was in grade IV, section A. There were four sections in grade IV. Each section contained 32 students. Desks and benches were arranged in two rows. The benches were small size and could accommodate for three students. The classroom was the example of mixed culture. Here different students from different communities and different cultures had gathered together to get education.

The teacher who entered the class, was good looking, well dressed, not aggressive and pleasant in mood. When the teacher entered the class , the students stood up and greeted “ good morning ma’am”. Then the teacher also greeted them back and told them to sit down. After that ,she started taking attendance of the students. When the teacher was taking attendance I found some students were gossiping and trying to disturb the class. She, then advised the students saying some good things like don’t ruin yourself by doing immoral things, ‘concentrate on your study’, ‘work hard’ etc.

Then the teacher asked the students to take out their mathematics books and exercise books with their homework that she had given them the previous day. Two

students stood up because they had not done home work and not brought their books also. The teacher ordered the captain to collect all the exercise books and take them to the office room. One student stood up and raised questions from the previous homework. And she also told to the class that if anybody had got any problem in solving questions of the exercise they would ask her without any hesitation, she would explain many times as they needed.

The medium of conversation in the class was English as well as Nepali language. Some students were found talking in their own mother tongue as well. The teacher was talking in a low voice so that students at the last benches could not hear her voice clearly and her handwriting on the white board was also small. The students of last benches were found not giving attention to the study. They were just engaged in other works rather than studying. Some of the students were exchanging their copies to complete the home work in the mean time. Teacher stopped everything and started teaching. She was teaching unitary method. She revised some of the exercises that she had done the previous day and started to do some new exercises. She revised the technique of unitary method and wrote it in the white board and explained and solved on the board and asked students to copy that in their exercise books. Teacher then tried to know the students by asking whether they had understood or not about the problem and asked them to raise questions if they haven't understood.

Immediately one student stood up and asked the teacher to describe it again. The teacher described the problem again. After that teacher asked one student to do one problem on white board. She called one of the boys who was talking with his friend. He said he couldn't do it. Then teacher asked one girl to do the same problem. She came in front of the class and solved the problem on the white board and returned back. Teacher thanked her for solving that problem. After that teacher wrote some

problems on white board and asked them to complete as their homework and left the classes. I observed the teaching learning activities of grade IV. She was teaching the lesson of simplification. She gave many examples, among them I kept some examples below:

$$\begin{aligned} &17- 5+ 9 \\ &=17+9- 5 \\ &=26-5 \\ &=21 \end{aligned}$$

She explained rule of BODMAS.

In view of the above classroom activities , it becomes clear that there was no proper interaction between teacher and students particularly students from Newar students in mathematics classroom.

Interaction may be with two individuals or in group. Interaction refers to the mental activity with their mind and soul. It depends upon the person's intellectual capacity. Inter-individual interaction refers to the sharing adjustment and c-operation. The interaction brings maturity in learning.

Among the students in the class one Newar student said “, *Most of the teachers are from Gurung, Tamang, Chhetri, Brahmin and other communities. So they do not respond to us properly. If mathematics teacher was from Newar community, it would be very easy for us to interact with them*”.

The mathematics teacher also explained, “*Classroom is multicultural and students use different languages for conversation. I can't understand what they speak. In the same way , I guess they also feel difficult in understanding my language. So, most of the students do not interact with me while teaching in the classroom. I should have to encourage them to ask the questions.*”

Ogbu(2000) elaborates that primary cultural differences may create problems interpersonal relation as well as difficulties in academic work for several reasons. Among them, most important reasons as children with cultural background start schooling from different cultural world and human relation in school but they get a vast different reality in school.

From the above view of student and teacher indicates that there is language discontinuity in the mathematics classroom. Due to the mixed language used by the students in the classroom , teachers don't understand the mathematics problem raised by students effectively. There are difficulties to interact with mathematics teacher with other students of mathematics because of language problem.

Bernstein's view describes that there are elaborated code and restricted code language. From the observation I found that Newar students are restricted language in the classroom. Such language is not liked by the teachers and that's why they do not respond to the students. However, teachers have to response and make social justice in the particular classroom setting. Teacher should response and behave in such way that students can learn mathematics effectively. Teacher should be unbiased while addressing problems of mathematics in multicultural classroom.

When student had a conversation with teachers with the restricted language , the teacher became angry and ordered to speak properly. Teacher replied by saying that the problem was easy and scolded the students that they were weak in mathematics and she reviewed few exercises and finished the chapter which was taught the day before. She didn't try to know whether the student understood or not. After that teacher started teaching another lesson without using instructional materials , teacher asked some questions to the students who seems to be good in

mathematics and didn't care of others. She gave some exercise as class work and remaining as students' homework.

Differences in teaching method , learning strategies, language behavior also cause the difficulty in interpersonal relation which affects their learning. There is not proper communication with mathematics teacher and Newar students in mathematics classroom. Teachers and students behavior in the mathematics classroom shows that they were dominated in mathematics learning process. The above discussion also indicates that the mathematics teachers neglected the problems of Newar and other students in mathematics because of language. There is no good interpersonal relation with Newar student and other students in the classroom. This clarify that there is cultural and language discontinuity in the mathematics classroom .So we should manage well from the students cultural perspective while planning the curriculum materials and classroom pedagogy. To make it effective, teachers have to response the problems and make social justice particular to Newar students and for all students in general.

Episode two

My second classroom observation was in grade V section A. There were 33 students in this class with mixed cultural group. There were 12 pairs of desks and benches arranged in two rows with 6 pairs in each row. There were Tamang, Chhetri,



and Brahmin and Newar students. Students with other castes were also present there, which made the class multicultural .The teacher entered the classroom and students greeted “ good morning ma’am”. Teacher replied good morning class and sit down

then after she told them to take their homework and which she had given them to complete the previous day but one student stood up and said that he had done a little and said that he felt difficult to solve other problems because he did not know how to do them, and requested to do those exercise for them. Teacher focused on the problem solving rather give the lecture method. Students and teacher followed discussion method of teaching in that class to solve the problems. I found teacher was quite friendly and students also acted as same. Besides among many students some students were doing unnecessary things in the class and engaged in their own work rather than studying and understanding the problems. The teacher didn't care for them. This indicated that teacher only cared for those who are interested to learn not to those students who are not paying attention in their study.

Episode three

My third classroom observation was in grade V section E. There were 33 students in this class with mixed culture group. There were 12 pairs of desks and benches arranged in two rows with 6 pairs in each row. There were



Tamang, Chhetri, Bhujel ,Magar and Brahmin and Newar students. Students with other castes were also presented there which made the class a multicultural setting. When teacher entered in the classroom and students greeted good morning mam. Teacher replied good morning class and sit down then after to take their homework which she had given them to complete the previous day but one student stood up and said that he had not completed because he felt difficult to solve all the problems

because he did not know how to do them, and requested to do those exercise for them. Teacher did not focus on the problem solving rather give the lecture. Students and teacher followed discussion method in classroom .After that the teacher was taught the lesson of addition and subtraction of fraction in the same class. She was teaching addition and subtraction of like fractions. She gave many examples , among them I kept some example below:

$$\begin{aligned} & \frac{4}{9} + \frac{1}{9} \\ &= \frac{4+1}{9} \\ &= \frac{5}{9} \end{aligned}$$

She explained that the fractions having equal denominator are called like fractions and to add them we just have to add the numerators by copying the denominator is same . By the similar way, she also described that the process would be same as for the subtraction. Here is the example of subtraction of like fraction:

$$\begin{aligned} & \frac{7}{17} - \frac{4}{17} \\ &= \frac{7-4}{17} \\ &= \frac{3}{17} \end{aligned}$$

after she gave different examples of addition and subtraction of like fraction one Newar student stood up and asked in mixed language for the process of unlike fraction. But the teacher replied that she would do it the next time.

I found that from the observation, a student which is from different culture asked some other topics. While asking he used mixed language which was different from class language. So ,he was humiliated and criticized by his classmates and

teacher. In fact the teacher had to encourage the students by accepting the questions in his/her mixed language rather than criticize them.

Episode four

My fourth observation class was in grade V Section D. There were 32 students in this section. There were 12 pairs of desks and benches arranged in two rows with 6 pairs in each row. There were Tamang, Chhetri, Thakali ,



Brahmin, Magar. Like other section this classroom was the example of mixed culture. Here different students from different community and different culture had gathered together to get the education. When teacher entered the classroom and students greeted good morning mam then teacher replied good morning class ,I also entered the class with the permission of Principal and mathematics teacher. I observed the teaching learning activities of grade V. The teacher was teaching the lesson of multiplication of algebraic expression . She started the lesson with multiplication of algebraic expressions. She explain the rules of multiplication giving different related examples of multiplication on the white board. The students in the classroom were multi-cultural setting.

She explained like this with examples by making rules.

We can multiply unlike terms and like terms together: multiply $2a$ and $3b$
 $2a \times 3b$

First write numerical coefficient and multiply $2 \times 3 = 6$

Then put letter in alphabetical order .i.e. ab

Therefore , $2a \times 3b = 6ab$

2. when we multiply like terms we should add the power of each .

$$a \times a \times a \times a = a^{1+1+1+1} = a^4$$

Teacher took another examples as follows:

Multiply $5a, 2a, a, 2a, a, a$

First we should write numerical coefficient with signs and find its products.

$$5 \times 2 \times 1 \times 2 \times 1 \times 1 = 20$$

$$a \times a \times a \times a \times a \times a = a^{1+1+1+1+1+1} = a^6$$

Therefore , $5a \times 2a \times 2a \times a \times a = 20 a^6$

As a researcher I found that the discussion method was adopted by the teacher in solving the exercise of this type. Besides this , it seems reasonable to conclude that discussion method was adopted in group and lecture method in the presentation of the lesson. I found some students not paying attention to the teacher. They were Newar. It seems that these students did not understand what the teacher taught in the classroom .

A mathematics teacher may not be able to describe individual and cultural perspectives of the students . It is rather man's capacity to know how to act in any situation and his/her capacity to adopt their behavior . There were some challenges as heterogeneous linguistic situation different level of languages , contents realities , interactions, interactions in the classroom, communication between teacher and students and students themselves, respecting the norms and values of each other's culture, adjustment and classroom setting ,encouraging the student participation.

In addition to challenges, it also promotes the right of all people enabling the students to understand the issues and problems of diverse society ; whatever, the teacher should make their mathematics teaching in the multicultural classroom

including Newar students. According to Vygotsky social constructivism theory, students can learn anything by interaction and collaboration with each other. So, the teacher adopted pedagogy in the classroom also accepted by Vygotsky theory of social constructivism.

Episode five

My fifth observation class was in grade V section B. There were 33 students in this section. There were 13 pairs of desks and benches arranged in two rows with 6 pairs in one row and 7 pairs in other row. There were



Tamang, Magar, Rai , Thakali, Brahmin, Chhetri and Newar etc.. Like other section this classroom was the example of mixed culture. Here different students from different community and different culture had gathered together to get the education. When teacher entered the classroom and students greeted good morning mam then teacher replied good morning class ,I also entered the class with the permission of Principal and mathematics teacher. I observed the teaching learning activities of grade V. The teacher was teaching the lesson of mensuration. In this chapter she explained perimeter of square , rectangle and triangle. First of all, the teacher explained the definition of perimeter. Then she gave different formulae:

1. The perimeter of a square $(p) = 4l$
2. The perimeter of a rectangle $(p) = 2(l+ b)$
3. The perimeter of a triangle $(p) = \text{sum of all sides of a triangle}$

She solved many problems on the white board one example which she taught in the class is mentioned below:

Find the perimeter of a rectangle whose length (l) = 12 cm

Breadth (b) = 4 cm

by using formula

$$P=2(l+b)$$

$$=2(12+4)$$

$$=2 \times 16$$

$$=32 \text{ cm.}$$

The teacher was applying lecture method to teach this chapter. I found some of students being confused. They could not understand the formula of perimeter of square and perimeter of rectangle. I also found the teacher was focusing more on brighter students and not on weak students. So, weak students were not paying attention while the teacher was teaching.

Student's Response

Respondents A

An 11 –year- old boy, respondent A studies in grade V. He lives in Kathmandu district , Manamaiju -2. He has 6 members in his house. He is the only son of his parents .His father and mother both are educated . He is a sincere student of his class. He is honest , hardworking and laborious student according to his parents and teachers. About his classroom activities ,he says that sometimes other students tease him and his friends. Other students disturb that classroom in the absence of the teachers but respondent A and his close friends co- operate with others .

He does his homework regularly and says that other friends ask him for help to complete their homework. He said that he takes help from his sister if he gets any

type of problem in mathematics. Talking about the mathematical instrument, he said that he gets mathematical instrument whenever he needs. His father provides him everything needed for his study.

Describing his mathematics teacher, he said “ *Our mathematics teacher is good. Sometimes she becomes absent and other students make noise when she is absent.*” he added “ The teacher teaches us at a fast pace and she is non-Newar. And it is being difficult for us to understand teacher’s language and sometimes she doesn’t understand our language.” Furthermore he says “ *Mathematics teacher is strict and we are afraid of asking questions to her. And she gives more priority to the intelligent and talent students . She doesn’t give much attention to the weak students but she sometimes encourages them to study hard*”.

About her homework and classwork , he said “*Our teacher gives us classwork and homework regularly but it depends upon the mood of the teacher while checking . She rarely checks our homework regularly*”.

About the punishment given by his teacher, he said, “ *She never gives us physical punishment .Sometimes she makes everyone stand on the bench for the whole period if we commit any mistakes and if we don’t complete our homework in time.*”

Describing his classroom and other physical structure of the classroom, he said “ *Our classroom structure is good , it is comfortable and well managed, white board position is also good in classroom and is appropriate for teaching learning.*”

When he was asked to say about remedial classes , then he said “ *we have got an hour extra class after school time especially for mathematics and science .The school provided us teacher to teach during that time but we have to pay extra fee for that class.*”

Respondents B

An 11- year- old girl studying respondent B at grade V. She was born at Nepaltar, Kathmandu district. Her economic condition is medium. It takes one hour to go to school from her home in a public vehicle. I asked her questions about her individual problems faced in mathematics classroom. She said “ *I feel difficulty in speaking Nepali language because we are Newari people and we speak Newari language most of the time in our community.*” And we also have different culture as well as language. We speak only Newari language at our home. We rarely speak Nepali language with our neighbours and teacher teaches mathematics in Nepali language, we feel difficult to talk in Nepali language and understand Nepali . I rarely participate in classroom discussion due to linguistic problem, hesitation and shyness of mine I feel hesitation because my knowledge and practice of mathematics is poor due to lack of self-confidence.

Respondent C

A 12 year- old- boy , born in Bhaktapur studies in in grade V. Nowadays he lives in Koteshwore. He has eight members in his family .He is the elder son of his family. His parents are well educated. They have a shop near their house and his father says there as a shopkeeper. He goes to school by bus. He doesn't have to do much work at home. Sometime he stays in the shop to help his father. The source of his family income is only a shop. They depend upon the income that come from the shop .He says that they used to have farm land once around Bhaktapur , they sold that land and shifted from there.

He is interested in studying and also in dancing. He said, “*Our economic condition is neither poor nor rich. I get very basic things that I need for my study. But sometimes I feel difficulty while writing and speaking in English language at school.*”

I also feel difficult to communicate with my friends and teachers because of my pronunciation and speech which produces Newar tone. They tease me sometimes for being Newar. I feel difficulty in understanding their language. Most of the Newar students feel mathematics as a difficult subject due to various reasons such as lack of tuition opportunity, poor economic condition, lack of educated people at home, due to the traditional culture and poor language. Once I also had asked my parents to help me for tuition classes but they denied saying that he cannot afford for extra tuition fee.”

Ogbu(2001) also argues that discontinuity is also occurred in the area of language, through the measurement. The majority group always dominates to minority group. It happens mainly due to the difference between teaching and learning strategy at home. Similarly, the children learn at school environment without natural context in their experience, learning may have no significance to their everyday life. Newar are one of the indigenous group.

So, the findings were ultimately matched. The Ogbu's theory, responses of questionnaire and interview of students were the same. A lot of individual problems in the classroom were found out. Most of the students admitted that they were not regular because of the involvement in different festivals. Likewise, understanding the Nepali language, participation in classroom activities, cooperation among the friends, hesitation to put forward the questions etc. were seen as the main problems among the students. They were also found to be dominated by the majority group of people living in the area. After the questionnaire survey, two respondents were individually asked whether these problems really existed in their daily life. They accepted the reasons found in the questionnaire survey. Some of them were

economically poor where as others were culturally backward. They could not grasp the subject matters taught in the classroom.

Teacher's Response

Respondent A

Respondent A is the mathematics teacher of Bhanubhakta Memorial Higher Secondary School, Panipokhari, Kathmandu . She has been teaching mathematics for grade 3, 4 and 5 . As a researcher I asked “, *What are the problems for mathematics learners of Newar children?*”

She responded, “*There are many problems for Newar Children inside the classroom. They are linguistic problem, poor classroom environment and their culture. Due to different kinds of feast and many other works Newar children can not come to school regularly as other students.*” .

According to the teacher , awareness of parents of Newar children is not that much poor but due to many feast , their children could not complete their homework on time. Newar children have to do the household work , farming and business work. Newar parents forced their children to participate in many cultural festivals and feast .Similarly teaching materials are not sufficient for mathematics learning . Newar children felt difficulties in Mathematics learning. As a result Newar children feel difficult in learning mathematics.

In brief , while surveying the questionnaire distributed to the students a number of problems were found out. One of the most problematic issues was about teaching learning activities . The teacher was not found to be supportive towards the students in the sector like teaching in friendly manner ,checking homework regularly, paying extra attention to the academically poor students etc. The teacher only focused

on the exam oriented questions rather than teaching the overall idea on the topics. More about the teacher did not motivate the students towards the subject matter.

Later on when the classroom was observed some of the mistakes were found from the student's side too. The students were not properly following the teachers directions. The student hardly did their home works and there was big gap between the teachers and students. The students were found hesitating to ask the questions to their teacher. Besides them other problems were there too. These problems include level of motivation, lack of encouragement, student participation, classroom discussion and providing extra class to the weak students etc.

Finally as a researcher , I asked the mathematics teacher respondent A about the overall problems faced by them and was asked why these problems were seen in her classroom. She admitted the causes found in the observation forms. Besides these reasons, she added other problems too. These problems were poor linguistic capacity, poor economic status, poor classroom environment and their culture and cultural practices. Similarly teaching materials were not sufficient for mathematics learners to learn.

Respondent B

Respondent B is another Mathematics teacher of Bhanubhakta Memorial Higher secondary school, Panipohari, Kathmandu. She has been teaching in primary level for the last six years.

She told that more than 20% of the students were Newar in her classroom. When she was asked about the difficulty level to teach Newar student in her classroom then she answered.

“Newar students are average in the classroom. They are neither best nor worst in the classroom. Sometimes they have language problem , they don't

*understand what we speak and sometimes we don't understand what they speak .
Mostly they use their mother tongue in the classroom for conversation .”*

When I asked her about the problems faced by Newar students in mathematics classroom then she replied, “ *Most of the students have faced problems in mathematics classroom, everybody thinks that mathematics is difficult subject. And talking about the Newar students , she founds many problems of Newar students in her mathematics classroom. Languages, irregularity in homework, carelessness in study , behavior , culture etc. Newar students are doing progress in their study. Sometimes they talk in their own language and create misunderstanding in communication. They create unnecessary disturbance in classroom by speaking unnecessary things in class.”*

Talking about the teaching materials in her classroom, she said “*There are lots of instructional materials in her school but it is not possible to teach by using those materials due to large number of students in the classroom.”*

Parent’s Response

Respondent A

Respondent A is permanent of Bhaktapur district at Sano Thimi. Now he is living in Jadibuti. His main occupation is farming . He has two sons and three daughters. Among them three daughter and one son are studying in Bhaktapur while one son is studying in Bhanubhakta Memorial Higher secondary school, Panipokhari, Kathmandu. I asked him a question “ *why don't you send your children to the school regularly?”* He said “ *There are more household works for survival of my family. Due to the lack of money , I couldn't afford to hire the other workers. I am compelled to convince to my children to do household works. Sometime, I could not*

manage to provide them with exercise books , books and pens due to lack of money and time”.

Respondent B

Respondent B is the resident of Manamaiju -2 Kathmandu, district a sixty – year old man. He had seven members in his family .

When he was asked about the economic status ,he said , “ *We have all basic necessary things at home and we are managing our daily lives with it. We are not that much rich. We have feast two/three times in every month. Due to these reasons we could not sent our children daily to school.*”

He further said, “ *Newar caste is not much backward. But their study is not being progressed. We can’t help our children to study because of illiteracy and also we could not provide necessary things needed in their studies.*”

The classroom is a miniature society. On the basis of above analysis and interpretation ,as a researcher , I found that Newar children are facing many problems in mathematics classroom. i.e. language problems, concept unclear, problem of teacher centered method , poor economic condition, culture festival like jatra after each month.

Factors Affecting Learning Mathematics of Newar Children

My second objective of the study was to find out the major factors that affected of the Newar children in learning mathematics. To achieve this objective , I had employed qualitative research and followed the ethnographic method. I collected data from different participant from Newar ethnic group. Ethnographical approach is applied to fulfill the objective. In this research method there is no formal way of asking questions. Every act of participants were based on the contents. More emphasis was given on how participants view on the construction of knowledge in cultural

contexts. My research is based on Bhanubhakta Memorial Higher Secondary School, Panipohari, Kathmandu.

Teachers and students find difficulties in teaching and learning mathematics. This is because the students are from different cultural, background and language. The culture of teacher and student does not match with each other. After my interview with the participants

I generated the following themes.

Mathematics anxiety

Mathematics anxiety is a one of the important aspect of student's related factors in selecting mathematics. Mathematics anxiety is a negative feeling to mathematics learning process. When examining student's problems in mathematics anxiety as a feeling of tension, apprehension, or fear that interfere the mathematics performance. Mathematics anxiety refers to forgetfulness and loss of confidence in subject matter. It affects the students' mathematics learning process. After the discussion, the following views of students were stated here related to mathematics anxiety.

I asked some participants among them one student said that mathematics is only for clever one. It is difficult to learn, only the talent students are able to read mathematics. I am also weak in mathematics. In the first class, our mathematics teacher discourages us by predicting negative aspects and made us afraid about the mathematics.

Another student replied that my brother told her that mathematic had several formulas and these formulas were necessary to remember for learning mathematics and difficult to understand. So, she felt that mathematics was difficult subject. And she hesitate join mathematics class due to mathematics anxiety. The views of mathematics teachers regarding above response are mentioned below.

The above picture shows the student and mathematics teacher discussion about the anxiety of mathematics which indicated that mathematics have several formulas which are very hard to understand and not related to other subjects. Students felt that mathematics really is an abstract subject.

Among the above students Aakankshya said that mathematics teachers told me that mathematics had several formulas. Many students were not ready to learn this formula student feared in learning mathematics. So the students did not pass mathematics that's why she really didn't like to learn mathematics when mathematics teacher teach mathematics in her class. She felt very nervous and when she wished the day would finish and the teacher may go out of the class.

The views of parents towards response were mentioned below some parents said in any society, most of the people feel mathematics is difficult subject then other so I suggested my son to study economics subject instead of mathematics. On these above views of the students, mathematic teachers, head teacher and parents indicated that mathematics is a difficult subject. Mathematics is only for clever students. Student feel mathematics is complex subject. It has no direct use to daily life. And it is not concern with other subject. So, it makes anxiety to mathematics learner to learn mathematics. Mathematics anxiety directly affects the students. So, they fail in mathematics in many schools. Similarly they argued that negative explanation about mathematics from the teacher's side parents and others created frustration and anxiety in learning mathematics.

Lack of Prior Knowledge of Students

Prior knowledge of students is another aspect of student related factors which means the previous knowledge of the students towards mathematical contents. The basic knowledge of mathematics in Primary level is the key factors which determined good performance of the students. It also determines student's performance in the further study. Mathematical pre-knowledge is the infrastructure as well all round development of students in the mathematics sectors. Those students who have lack of sufficient prior knowledge do not want to learn and could not get success in the further level. In the lines the following views of students are stated related to prior knowledge of students.

The above view of student's emphasize that students have no sufficient previously learned mathematical knowledge. The students cannot assimilate new mathematical concept and principle to previous learned mathematical structure.

The mathematics teacher asked the students about the pre knowledge of this topic but every student were silent and nobody answered this question. They were shy and not frank with the teacher and students they seem like they were afraid with the teacher and if I answered somebody would laugh at me. Ankita

Shrestha said: I had main problem to learn mathematics in the primary level. Mathematics course were not finished in time. Also I know about use of mathematics. So I did not actually like to learn mathematics when I face to problems in mathematics it begins to irritate.

From the above information it was found that most of the students promoted in the subject of mathematics at lower level were without concept of mathematics, so they were unable to perform good in mathematics similarly, mathematics teacher say in primary level mathematics curriculum were not include the sufficient basic concept of mathematics. Students felt mathematics is new one and difficult subject. This created a great problem. Like in the study time they go to collect herbal valuable plants and grazing the cattle in the forest to get a little amount of money. Basically, students are not serious in basic rules and properties of mathematics. So students did not pass in mathematics. To support the view of parents response is given, “ as my children always fail in mathematics in primary level”. So, I could not recognize why they fail in mathematics.

The above mentioned view indicated that prior knowledge of mathematics is important for the betterment of the students to pass mathematics. These all response indicated that the students cannot able to assimilate or relate new mathematical concept and principle to previously learned mathematical structure.

In regarded, Albert Bandura's social learning theory emphasizes the importance of observing and modeling the behaviors, attitudes, and emotional reactions of others. Bandura (1977) states: "Learning would be exceedingly laborious, not to mention hazardous, if people had to rely solely on the effects of their own actions to inform them what to do. Fortunately, most human behavior is learned observationally through modeling: from observing others one forms an idea of how new behaviors are performed, and on later occasions this coded information serves as a guide for action." (p22). Social learning theory explains human behavior in terms of continuous reciprocal interaction between cognitive, behavioral, an environmental influences. The component processes underlying observational learning are attention, including modeled events distinctiveness, affective valence, complexity, prevalence, functional value) and observer characteristics (sensory capacities, arousal level, perceptual set, past reinforcement), retention, including symbolic coding, cognitive organization,

symbolic rehearsal, motor rehearsal), motor reproduction, including physical capabilities, self-observation of reproduction, accuracy of feedback, and motivation, including external, vicarious and self reinforcement.

Student's Labor in Learning Mathematics

It is another and important aspect of students related factors that affect in students pass rate in mathematics. Mathematics needed practice which has different theory and several formulas. So, to learning of mathematics, students should manage extra time for practice. Generally mathematics achievements determine students' labor in present situation; students are not laborious in mathematics learning. Consequently, mathematics achievement of students was decreasing. It affects on student pass in mathematics. Student's labor is responsible for students following views of mathematics teachers were stated here related to students labor in learning process of mathematics.

Some mathematics teacher and students do not try to learn mathematics and do not want to do extra labor. They are engaged in unnecessary task in the class room during learning process. Mathematics is more complex subject to understand than other subject. But students are not serious to do hard labor in the process leaving mathematics but in reality students did not give more time to learn mathematics the supported views of head teacher towards above response as given students aim to pass the exam without doing hard labor. They tend to spend few time to prepare exam. So, most of the students choose economics and geography instead of choosing mathematics and another supportive view of parents towards student's labor in learning mathematics is given as our economic condition is weak because of traditional agriculture. Our children are bound to help us in farming and small business. Children have no time to learn at home.

The above view of mathematics teacher and parents indicate that most of the student did not have sufficient time to learn mathematics. Students are engaged in unnecessary task instead of teaching activates. Some students are busy in their house hold work because they are busy in house hold work and farming. Students have no time in their home to learn mathematics. They want to pass the exam without doing hard labor and practices in mathematics. Consequently, students did

not show interest to study mathematics. Those students did not manage extra times and ignore for doing practice. Obviously they would be weak in mathematics and they are unable to pass in mathematics.

Chapter –V

FINDINGS, CONCLUSION AND IMPLICATIONS

Findings

On the basis of the analysis and interpretation of data the findings of this study are mentioned below:

From the research report and the data collected through classroom observation and interview with students , unstructured interview with selected students , teachers and parents , it was found that there were many problems faced by Newar children in learning mathematics at primary level.

Here are many problems arisen on classroom due to classroom management and environment. The main problem is large number of students studying in the same class. The classroom environment also affects Newar students in learning mathematics.

I found that there is low participation in classroom discussion. Most of the Newar students don't complete homework and classwork. Also, there is very limited interaction between teacher and Newar students. Some of Newar Children hesitate to share problems in classroom .Their friends don't help them in solving mathematics problems in the classroom.

Many Newar students of Kathmandu valley have language problems. Newar Students feel difficult in understanding teacher's language while teaching. Some teachers don't check mathematics homework and classwork properly. Teachers don't manage individual instruction for weak students. There is gap between genius students and weak students which is significantly different. Most of the teachers were feeling difficult to motivate them. Many times Newar students were punished by the teachers. Some teacher don't encourage them for learning mathematics but

some teachers devoted themselves to make students learn mathematics. Some teachers are found helping Newar students for solving mathematical problems.

The factors affects learning mathematics were :

-) Mathematics anxiety,
-) Lack of prior knowledge of the students.
-) Poor economic status of parents.
-) Lack of motivation to learn mathematics.
-) Due to low economic condition of students, they have to engage their household work to fulfill their daily needs.

Conclusion

On the basis of above major findings I have found the following conclusions:

- i. Due to domination of language , Newar children cannot speak Nepali language properly. It creates difficulties in mathematics learning.
- ii. There are Many difficulties in mathematics learning of Newar children due to the lack of proper environment at school as well as home.
- iii. The Newar students must be regular in mathematics learning.
- iv. The teacher should address the interest , curiosity and need of Newar children in mathematics classroom.
- v. There are the low participation on classroom discussion.
- vi. Newari students felt difficulties for learning mathematics due to cultural discontinuity.
- vii. More learning opportunity should be created for Newar students in mathematics learning classroom.

Implication

My research will be a way to improve school level mathematics education from the different cultural background. My research will help in the study about the

problems faced by Newar students of other levels as well. The teacher preparation about effective pedagogy can be another alternative for improving situation in understanding the language of the children. This inquiry is to help to improve our mathematical pedagogy and solve the problems in teaching learning mathematics.

- i. This study is useful for the researcher for further study.
- ii. This study affords new researcher to conduct new research which can be used a secondary source level.
- iii. The government of Nepal should supply the essential teaching materials and should encourage school administration to purchase such teaching materials.
- iv. A similar study can be done for lower secondary level.
- v. It would be better to study the problems of mathematics teaching learning situation not only by using questionnaire ,observation and interview but also other tools.
- vi. The similar study can be done in the other district of Nepal as well.
- vii. Though the school mathematics curriculum is entirely based on practical activities , teaching learning style is based on rote learning. Due to the lack of teachers' mathematics pedagogical knowledge school mathematics is being a hard subject for Newar students in particular and all students in general. So , program of school mathematics teacher 's professional need to be re-think.
- viii. This research is applicable for curriculum planners text book writer, policy makers and also myself to improve my professional development.

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Appendix – A

Classroom Observation Guideline

School's Name: Address:.....

Student's Name:..... Class:.....

Total no. of students:.... Total No. of Newar students:.....Date:.....

The researcher will ask the Newar students to give information about the following topics and sub-topics.

Classroom Management and Environment

-) Classroom structure and structure
-) Seat planning of students
-) Cleanliness
-) Space for teaching materials

Student's activities in Classroom

-) Greeting to teachers
-) Following direction of teachers
-) Medium or language of conversation
-) Completion of class work and home assignment
-) Participation in Classroom discussion
-) Misbehavior with students and teachers
-) Conversation with teachers
-) Unnecessary talks among students
-) Student co-operation
-) Sharing problems in classrooms with students
-) Sharing problems in classrooms with teachers
-) Interaction between teachers and students

) Regularity and Punctuality

Teacher's activities in classroom

) Classroom Entrance

) Revision of course

) Language

) Motivation

) Use of re-enforcement

) Use of instructional materials

) Encouragement to students

) Classroom pedagogy

) Interaction with students

) Homework

) Class work

) Providing help for weak students

Appendix – B

Interview Guideline for Students

School's Name: ----- Address:-----

Student's Name:----- Class:-----

The researcher will ask the Newar students to give information about the following topics and sub- topics.

Classroom management

-) Is your classroom neat and tidy?
-) Is seat planning is well managed?
-) Is there sufficient furniture?
-) Do you think the position of white board is correct?
-) Is your classroom noisy while teachers are teaching?
-) Do your teacher use teaching materials?
-) Do you get disturb by your friends?
-) Is there any kinds of bullying in your classroom?

Student's activities in classroom

-) Do you greet while your teacher enters the class?
-) Do you follow teacher's instruction in class?
-) Do you brings all your required materials(i.e. books, notebooks, pens etc) regularly?
-) Do you complete your classwork in time?
-) Do you feel difficult to understand English and Nepali language?
-) Do you submit your home task regularly?
-) Do you feel difficult to talk with your teachers?
-) Do you participate in extra curricular activities?

-) Do you get equal opportunity in participation in classroom discussion?
-) Do you hesitate to share problems in classroom?
-) Are all your friends friendly?

Teacher's activities and school administration

-) Does your teacher give assignment regularly?
-) Does your teacher check your assignment regularly?
-) Do you feel that your teacher's behavior towards you is different than others?
-) Does your teacher discriminate you?
-) Does your teacher ask questions frequently?
-) Does your teacher motivate you for practicing mathematics problems?
-) Does your teacher describe the problems individually?
-) Do you feel difficulty in language used by your teacher?

Socio-economic problem

-) Do you get sufficient time for doing your homework?
-) Do your parents help you in solving your mathematical problems?
-) Does your parent provide you sufficient teaching materials?
-) Does your parents provide you extra classes in home?

Appendix-C

Interview Guidelines for Teachers

School's Name:----- Address:-----

Teacher's Name:----- Class :-----

The researcher will ask an interview with teachers to gather information under the following zmentioned topics and sub-topics.(specially focusing on Newar students)

Classroom management

-) Is your mathematics classroom neat and clean?
-) Is seat planning is well managed?
-) Do you use appropriate teaching materials while teaching?
-) Is your classroom noisy while running class?
-) Do your students talk unnecessary things while you are teaching?
-) Do your students disturb you by asking unnecessary questions?

Student's activities in classroom

-) Does your students greet while you enter the class?
-) Do the students follow your instructions in class ?
-) Do they bring all necessary documents (i.e. books, copies , pens etc.) regularly?
-) Do your students complete their classwork and home work on time?
-) Do they feel difficult to understand English language?
-) Do they participate in extracurricular activities?

Teacher's activities and school administration

-) Do you give home work daily?
-) Do you check their class work and homework on time?
-) Do you feel difficult to make them understand in English language?

-) Do you make them participate in extra curricular activities?
-) Do you use teaching materials while teaching?
-) Do you ask questions frequently?
-) Do you motivate for practicing mathematics problems?
-) Do you describe the problems individually to the students?
-) Does your school administration provide teaching materials to you?
-) What do you think about the Newar students of your class?
-) Do you feel that their behavior towards you is different than others?
-) Do your school administration conduct extra classes for weak students?

Socio-economic problems

-) Do you think that your students get sufficient time for doing their homework?
-) Do you manage teaching materials from the community?
-) Do you think that it will be easier to you to teach if parents provide students extra classes in home/
-) The researcher will ask the Newar students to give information about the following topics and sub-topics.