

**CONTENTS**  
**ADVERSITIES ENCOUNTERED IN LEARNING MATHEMATICS BY CHEPANG**  
**CHILDREN AT PRIMARY LEVEL**

**A**  
**THESIS**  
**BY**  
**DEBAKI KANDEL**

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**A**  
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Entitled “**Adversities Encountered in Learning Mathematics by Chepang Children at Primary Level**” has been approved as partial fulfillment of the requirement for the Degree of Master of Education.

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### RECOMMENDATION LETTER

This is to certify that Mrs. Debaki Kandel a students of academic year 079/70 with campus Roll No. 1058, Thesis No.1065, Exam Roll No. 281013 and T.U. Registration No. 9-2-29-1923-2008 has completed this thesis under my supervision and guidance with in the period prescribed by the rules of Tribhuvan university, Nepal. The thesis entitled “**Adversities Encountered in Learning Mathematics by Chepang Children at Primary Level**” has been prepared for the partial fulfillment for the Degree of Master of Education in Mathematics. To the best of my knowledge, the study is original and carries useful information in the field of study. It is recommended and forwarded that this thesis be submitted for the evaluation to award the Degree of Master of Education.

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## **Abstract**

The main objective of this study is to identify and analyze the problem faced by Chepang children in mathematics classroom in Primary Level. This research is qualitative in design with ethnography in approach. Classroom observation form and interview guidelines to students as well as teachers were used to collect data. Besides these, unstructured interview of selected students, teachers and parents had also taken to analyze problem.

On the basis of reviewed literatures and different concepts of theories, such as : cultural difference and discontinuity theory, constructivism and the different aspects were developed as indicators to analyze the collected information of the study.

The study found that the home and the school environment are not suitable for the mathematics learning of Chepang students. There are linguistic problems at mathematics classroom. There is lack of interpersonal relations. In some of the places there is proper interaction but in some schools there is no proper interaction between teacher and Chepang students at mathematics classroom.

To improve the learning capacity of Chepang students in mathematics, they should be motivated to be regular in school, there should be discussion between Chepang parents and teacher about their children, there discount in tuition classes, there should be at least one Chepang teacher in each school. The economic help should be given to them and the people who discriminate them should be discouraged.

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## Chapter – I

### INTRODUCTION

#### Chapter Overview

This chapter begins with the background of the study, statements of the problems, objectives of the study, research questions, significance of the study, delimitation of the study and ends in the definitions of key terms used.

#### Background of the Study

The discipline of mathematics in Nepal is considered as a tough subject for the students. The school mathematics curriculum designers have not yet been able to relate the subjects with the Nepali life style. A Nepalese proverb '*desh gunako bhasha kapal gunako.....*' is related to the study. Mathematics directly deals with the human life. It is believed that the development of mathematics and development of civilization go together. Mathematics was created to fulfill human needs. It had been developed simultaneously with the development of society. Mathematics is not only taught and practiced through the formal institution but the contemporary societies have also been practicing it with its own idea and belief. (Ernest, 1991)

"Mathematics is the Science of number and space"(Advance learner oxford Dictionary (1995). A famous mathematician John luck defines the mathematics as follow, "mathematics is a way to settle in the mind a habit of reasoning" because mathematics is a way of thinking i.e. a way of organizing, analyzing and synthesizing a body of data.

There may be several reasons but among them, the nature of mathematics is a very strong problem. For a very long time, much of the mathematics classroom practices and curriculum development activities throughout the world have been



dominated by the view that mathematical Knowledge is both culture and value-free knowledge(Bishop ,2002; Ernest,1991).that means the properties of mathematics can't be changed according to the context or in other words, this nature is called universal nature of mathematics.

The Chepang is an indigenous Tibeto-Burman people group numbering around fifty-two thousand mainly inhabiting the hardy ridges of the Mahabharat mountain range of central Nepal (Bist , 2004). Over the past two or three generations the Chepang have begun to slowly shift from a semi-nomadic lifestyle to a more settled way of life, relying increasingly upon the produce of permanent fields of maize, millet and bananas (Bist' 2004). Historically, the collection of wild yams and tubers, fish caught from nearby rivers, bats and wild birds, and periodically wild deer hunted from nearby forests, have supplemented their need for carbohydrates and protein. With increasing population, lack of arable land and few irrigation options, despite forest supplements, malnutrition has been an historic problem for the Chepang who have often been characterized as the poorest of Nepal's poor. Chepang men and women are basically egalitarian and no social ranking exists as it does in caste Nepalese society.

Chepang is one of the indigenous tribe , which is backwarded socially , lingually , politically and culturally(Chepang Aawaja, 2066). No changes occur in their life, slogans are only slogans for themselves. This is a second decade of twenty first century, but their status is remaining same. They have not the facility of employment, easy access to education, health etc. They are homeless and they have not a piece of land in the name of properties. As the same way they are also backward politically and in all sectors.

There are mainly tribes, among them, chepang is considered as backwarded. They are also few in population. This tribe is also called "chobang" or "parja" sociologists are divided about the origin of chepang. Some of them say that bay of Trisuli river, while others support that sunathali of Dolakha district is the origin of the tribe. They love to say themselves 'lava' and 'kusha' ,the son of Ramchandra and as a Aryan, but considering physical structure and language they seems near to Mongolians. There is a one saying found in chepang community that Raksirang VDC of Dolakha district, ward no nine, once a queen came and got a baby in stone, the born baby dissapeared with the same stone, she searched for him and did'nt found which is the caste chepang (Chepang Aawaja, 2056).

Such a saying indicates that the tribe chepang is in its existance since Ramayan time, which view is also supported by sociologists. The tribe chepang lives in the stony part of mountains, rocks, 'Chep'(crack part) of stone –so, 'chop+wang=Chepang' –long time after it is started to say 'chepang'. the general introduction of tribe chepang was scripted, and accepted its existance by late king Prithivi Narayan Shah, on 15<sup>th</sup> kartik, 1816 B.C ( Chepang Aawaja, 2056). Generally, the resistance of this caste lies 200m to 700m from the sea level. Mainly, they live in South-West of Dhading, Northern part of the Chitwan, South-East part of gorkha and various part of Makawanpur. In Samilar vain, recently, they are also migrated to the inner part of the Chitwan, Tanahun, Nawalparasi, Bara, Parsa, Banke, Bardia and Punarbas.

Since, the researchcher selected Dhading district as a research area, here the population distribution of chepang peoplein Dhading district.According to census report 2001 B. S ,the total population of chepang is 52,237 chepang in the country 0.23% of the the chepang population. . Then VDCS of Dhading district- Jogimara,

Dhusa, Mahadevsthan, Benighat, Gajuri, Pinda, Thakre, Goganpani, Naubise, Kumpur, they are mostly found of only three VDCS: Mahadevsthan , Gajuri and Benighat , were thick resistance of chepang.

So, in our school there are the students of Chepang culture. Our classroom is the reflection of the societies. There are various problem in learning mathematics in the culturally diverse classroom. Till we can not identify the problems of Chepang children to learn mathematics and can be found the solution to address the problems of Chepang students to learn mathematics. So many problems are occurring frequently. That is why I decided to conduct systematic study on the topic “Adversities Encountered in Learning Mathematics by Chepang Children at Primary Level”.

### **Statement of Problem**

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 adversities are faced by the Chepang children in learning mathematics? Questions like these occurred in my mind, hence I am motivated to conduct the research on the topic “Adversities encountered in learning mathematics by Chepang children at primary level”.

- (i) How do Chepang student study mathematics in primary level?
- (ii) What are the adversities faced by Chepang children in Mathematics classroom at primary level?
- (iii) What are the major factors affecting learning mathematics by Chepang children?

### **Objectives of the Study**

The main objectives of this study were ::

- (i) To explore the adversities faced by Chepang children in learning mathematics in primary level
- (ii) To find out the major factors that affect learning mathematics of Chepang children.

### **Significance of the Study**

Although Chepang are considered as culturally rich, they are still away from the mainstream of educational development. In the present context, mathematics is considered as a very difficult subject in our country. This situation is even worse for Chepang student. This research was equally helpful for strengthening the policy that gives an movement to the local curriculum in primary education.

The access of school mathematics should touch the community , requirement or demand. School is a home of different distinct ethnic groups. A mathematics education must view mathematics with in the context of total education of the individual.

Very few studies have been done to find out the adversities. problems faced by Chepang children in mathematics classroom. So, I have planned to carry out my research on this topic.

In such argument, I intended to know the influence of mathematics on Chepang community to see positive as well as negative mathematical impact upon Chepang children.

The main significances of the study are as follows:

- (i) Its finding will help to improve the achievement in mathematics of Chepang students.
- (ii) This study will help to open the doors for the further study in adversities of mathematics learning of Chepang children.
- (iii) Its finding will help mathematics teacher for teaching mathematics at different,cultral groups.
- (iv) Its finding will also helps to the curriculum designers, policy makers while designing the mathematics curriculum for them and other stake holders related to education.

### **Delimitation of the Study**

Every study hast its ownlimitation. As it, this study also has some limitations. This study has following limitation.

- (i) This study is limited to Dhading district only.
- (ii) This study had included the students of primary level only.
- (iii) This study is limit carried out within the certain periphery and in particular area. So, the findings of this study may not be generalized to other areas.
- (iv) Findings of the study is limited on the basis of students, parents and teachers only.
- (v) This study will be limited on qualitative design.

## **Definition of Key terms used**

I have used number of terms with their specific meaning in my research. The terms I have used in my research imply contextual meanings to clarify my perspectives though they have other meanings in accordance with their specific registers.

**Adversities:** It refers to the difficulties found by students while learning in different situation or matter. Doubtful or difficult matter that require solution is also known as adversities.

**Encountered:** Encountered refers to be come up against something or faced or meet something or pass through some situation unexpectedly.

**Learning:** Learning is the process of obtaining or acquiring knowledge through different experiences. Knowledge or skill gained through education is also known as learning.

**Chepang:** Chepang refers to an indigenous ethnic group of Nepal.

**Literate:** Literate means being able to at least read and write General Nepali and perform fundamental mathematical operation in daily life.

**Illiterate:** Illiterate are those persons can't be included in the minimum definition of literate.

## **Chapter – II**

### **Review of the Related Literature**

#### **Chapter Overview**

This chapter describes the review of the relevant literature relating the various aspects linked with adversities faced by the students while studying mathematics. This chapter includes the description of the different literatures and theories. This chapter also includes the conceptual mapping which shows the process of the research and theoretical understanding which contains the indicators to study the adversities encountered in learning mathematics by Chepang children. The literatures are categorized under two sub topics as Empirical literature and Theoretical literature. Empirical literature contains the description of the different studies done by the different people under different topics which are related to this study and theoretical literature describes the different theories which are applicable for this study. Theoretical literature describes Cultural difference and discontinuity theory, Constructivism theory and Bernstein’s Language Code theory.

#### **Empirical Literature**

Basnet (2003) did a research on “Teaching problem faced by the mathematics teachers in existing curriculum of grade eight”. The objective of this study was to find the teaching problems faced by the mathematics teachers of grade eight and the problems faced by students on textbook, teaching learning activities and physical facilities. He used simple percentage for analyzing the data. He concluded that mathematics teaching and learning is not satisfactory at grade eight in Jhapa district. The teachers and students faced many problems due to the lack of training, orientation opportunity for the mathematics teachers in existing curriculum, inadequate textbook,

lack of instructional materials, lack of physical facilities in the classroom, large class size and defective evaluation system and so on.

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: “Does 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.

Attrey (2006) did a research entitlee “A Study of Problems Faced by Mathematics Teachers to Maintain Positive Discipline in Secondary Level Classroom” with the objectives to examine the discipline of students in mathematics classes at secondary level and to identify the problems faced by mathematics teachers maintain positive discipline in secondary level classroom. The design of study was



mixed in nature. The researcher gathered information from classroom observation and interview questionnaire for teacher. He analyzed the classroom observation result by using mean weightage and questionnaire through the related theory. He found the conclusion, mainly the problems are attributed to crowdedness of students in classroom, unavailability of furniture, unarranged seat planning, lack of proper teaching materials, lackness in enforcing school regulations, unsystematic teaching methods, poor evaluation of homework and class work, limited co-curricular activities, punishment system, poor guidance at home, unsuitable family environment.

### **Theoretical Literature**

There are so many theories which can be used to understand the problems in learning mathematics such as sociological theories, learning theories, cultural theories, everyday life theories and cultural difference and discontinuity theory, social constructivist theory and so on. So, for the analysis and interpretation of data I used different theories which are described briefly below.

### **Cultural Difference and Discontinuity Theories**

Ogbu (2000) delineates about the cultural difference and cultural discontinuity theory. That deals with the problems in children's learning caused by the differences and discontinuity between the culture of home and school. Those children, whose home culture is much similar to the culture of school, can cope easily with the system that may result better learning achievement. Similarly, the children with unmatched or dissimilar home cultures with school cultures and those who do not have enough attention in their learning and do not get much recognition of their cultures and they have to work hard achieving learning outcomes compared to their children with good matched. He has identified the features of cultural differences mainly of three types of minority groups, they are: autonomous, voluntary and involuntary minorities.

According to Ogbu (2000), autonomous minorities are minorities in number, they do not have the problems of cultural differences and language since they have similar culture and language to the majority. Voluntary minorities are people who have migrated voluntarily expecting a better life, opportunity and more political freedom in any other society. They usually encounter the problems in the schools mainly due to cultural and language differences. Involuntary minorities are found as caste like minorities who were forcefully brought to any other society against their will for slavery or forced labor in the time of colonization. However, he developed the theory of cultural differences on the case of the US, it might have implication to this study that is related to cultural discontinuity and learning problems in mathematics of Chepang who are also minorities, discrimination and domination. He argues that the gap between the minority cultures and the mainstream culture does not favor schooling/learning of minority children who are socially and culturally disadvantaged.

Ogbu (2000) has emphasized on two types of cultural differences, i.e. the primary cultural difference of voluntary minorities and the secondary cultural difference of involuntary (caste like) minorities. As his study suggests, “involuntary minorities face more problems in schools learning, participation and performance due to the gap between their cultures and mainstream culture”. For them, it is too difficult to cross cultural boundaries in schools compared to the voluntary minorities with the primary cultural differences. He further elaborated that primary cultural differences may create problems in interpersonal and inter-group. Among them, most important reason is as children with different cultural backgrounds start schooling assuming different cultural world and human relations in school but they get a vast difference reality.

Ogbu (2001) furthermore argues that discontinuity also occurs in the area of language, thought and measurement. It happens mainly due to the difference in the home/community which is informal education and the style used in school is formal education. In case of Nepal, schools are also influenced by western schooling system as a consequence of donor network, modernization and globalization process. Ogbu emphasized that though schools are established for the purpose of helping children in their personal development and modernization of nation. There is not doubt in disrupting the transmission of the traditional culture of people. It is mainly due to the alienation of curricular content to the existing culture of people and very little or no reinforcement in the home and community that results isolation of school from the cultural system it is supposed to serve. In addition to this, the way/style of teaching/learning in school is also problematic because of its formal and unpredicted nature as it occurs only in rigid and ritualistic manner that does not ensure hearing of children.

Ogbu(2000) argues that language is the major factors for the interaction. He further explained that discontinuity occurs in language. “If there were unmatched language at home and schools culture and interaction may not take place”. Ogbu explained that unmatched home culture and school environment influenced learning.

### **Constructivism**

Constructivism is a theory of knowledge that argues humans generate knowledge and meaning from an interaction between their experiences and their ideas. During infancy, it was an interaction between human experiences and their reflexes or behavior-patterns.

Learning means the relatively permanent change in behavior, which occurs as a reinforced practice. It considers both physical and mental process. Behaviorist

mentioned that learning is the interaction between human being and external environment. They take learning as stimulus response process. If response to the stimulus is reinforced or rewarded then a kind of habit is informed. The cognitivist mentions that learning is an innate capacity of human being.

Another kind of thought about learning derived that it occurs from social interaction. These scholars believe that each and every child learns from society through social interaction with family and environment knowledge can be constructed through the active participation. This new thought is given by constructivism following the theories, actions, reflection and socialization.

Obviously people make their own meaning from their own beliefs, constructs new ideas from what they observe, listen and perceive. They do not always use the traditional method but use their own strategies to solve their problems on their own ideas. The child needs some mediators like parents or peers to uplift his/her knowledge that existed with him/her.

The constructivism theory is based on observation and scientific study about how people learn. People construct their own understanding and knowledge, through experiencing things and reflecting on those experiences. The learner is active creator of his/her knowledge. In general case, it usually means encouraging students to use active techniques (experiment problem solving) to create more knowledge and then to reflect and talk about where they are doing and had their understanding is changing. Students in the constructivist classroom ideally become “expert learner” by questioning themselves. This flues teacher helps student to construct knowledge by providing tools such as problem solving and inquiry based learning activities with which students formulate and test their ideas, drew conclusions and inferences, and pool and convey their knowledge in a collaborative learning environment.

Constructivism transforms the students from a passive receipting of information to active participant in learning process. Constructivism categorizes students on its three axioms that are as follows.

- (i) Learners learn knowledge from their active participation.
- (ii) Learners gain knowledge while reflecting on their own action.
- (iii) Learners gain knowledge when they try to convey their solution to others.

From above axiom, Upadhyay (2001) took three terms action, reflection and scaffolding to describe broad aspects of constructivism, psychological aspects, philosophical aspect. Piaget stresses on the key word 'action' through which he advocates that knowledge is gained. He said that essential way of knowledge is not directly through our sense, but primarily through our action. Philosophical aspect of constructivism is also called radical constructivism, which is led by Glasserfeld who advocates that knowledge is personal, subjective and unique. And anthropology aspect is termed as social constructivism headed by Vygotsky, who states that knowledge is socially constructed.

### **Vygotskian Social Constructivism Theory**

Constructivism is the new theory. Vygotsky (1978) Vygotsky has developed Socio-cultural theory and he believed that children are active seeker of knowledge. In this theory, rich social and cultural context deeply affect children's cognition knowledge is constructed in social situation of negotiations rather than being the reflection of the objective reality, which is known as social constructivism. In social constructivism theory, each human being makes sense of the world in a unique way. According to Vygotsky, the children's development cannot be understood by studying the individual that it needs to examine the external world. Child can capture every

kinds of information which is needed from the context to construct the knowledge.

The role of experienced person is to assist the child providing the structure and questions that provide the assembly of the information and organizations.

According to social constructivist, Vygotsky knowledge is constructed in two ways in the social situation. Firstly, social interactions influence on the nature of knowledge that is constructed and process of individual use to construct the knowledge. Thus, the constructions are socially centered and involve process of understanding, constructing meaning and making sense, children construct knowledge not only from individual but also from the context and the interaction with others who have more knowledge. Here, the knowledge constructed by child is not through child's capacity only. The child needs some mediator like parents, teachers, adults or peer to uplift his knowledge from the knowledge s/he has. These mediators are the members of society and culture context influence what the member thinks about how to learn, to think and acquire information any why children learn the particular form of knowledge. Thus, Vygotsky proposes that child's knowledge could be predicted if we could understand a social context. Thus, Vygotsky's child is a social, outer culturally determined child.

### **Bernstein's Language Code theory**

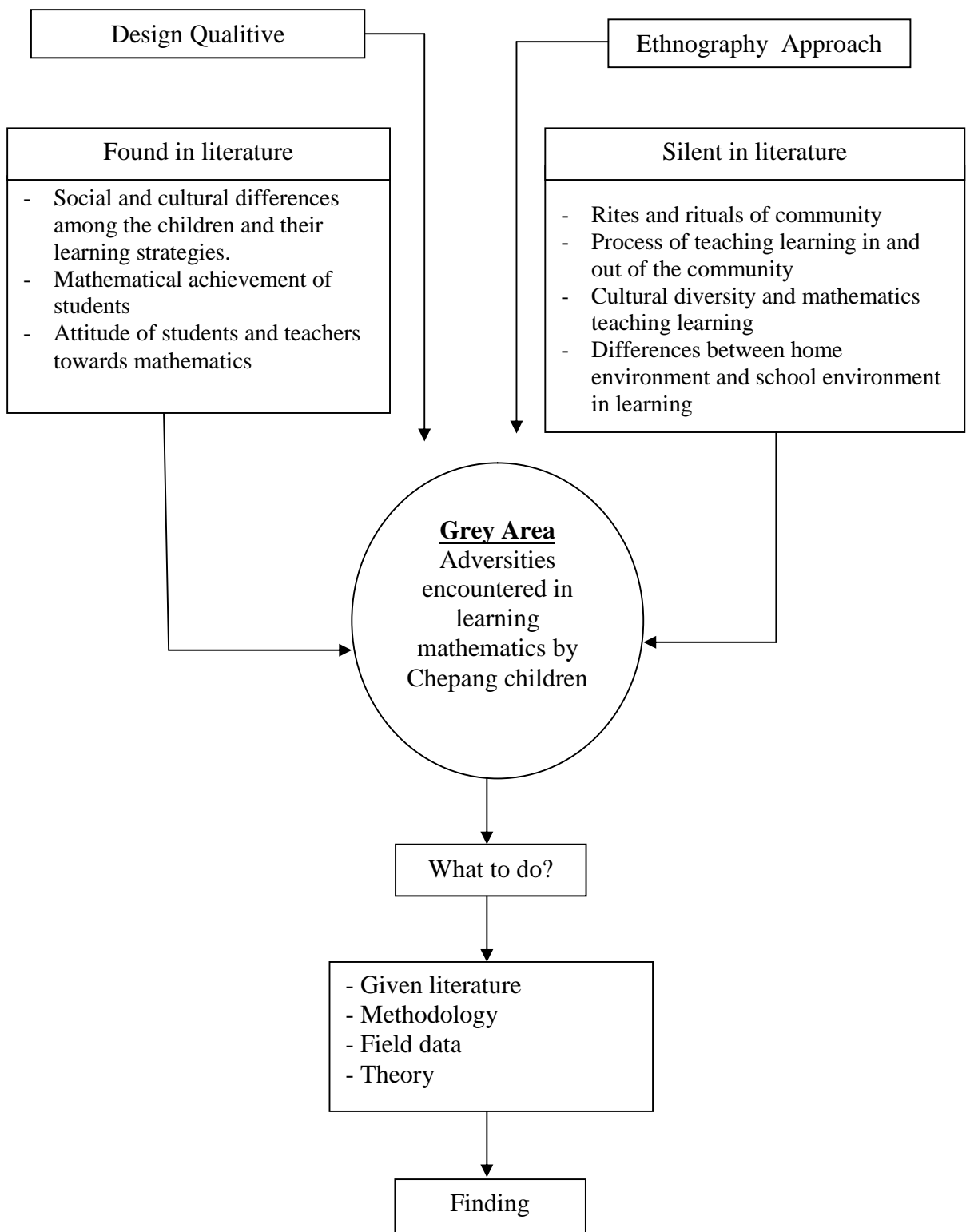
Basil Bernstein made a significant contribution on the study of communication with its sociolinguistic theory of language codes. Within the broader category of language, codes are elaborated and restricted. The term code, as defined by Stephen Littlejohn (2002) "refers to a set of organizing principles behind the language employed by members of a social group" (p. 278). Littlejohn (2002) suggests that Bernstein's theory shows how the language people use in everyday conversation both reflects and shapes the assumptions of a certain social group. Furthermore,

relationships established within the social group affect the way that group uses language, and the type of speech that is used. According to Bernstein (1971), “Forms of spoken language in the process of their learning initiate , generalize and reinforce special types of relationship with the environment, and thus, create for the individual particular forms of significance” (p. 76). That is to say that the way language used within a particular societal class affects the way people assign significance and meaning to the things about which they are speaking. Littlejohn (2002) agrees and states, “people learn their place in the world by virtue of the language codes they employ” (p. 178). The code that a person uses indeed symbolizes their social identity (Bernstein, 1971).

### **Conclusion**

As I know that very few researches have been carried out on the adversities encountered in learning mathematics by Chepang children in the qualitative paradigm. I studied many previous research works. They have not discussed in this area. I found the gap between the reviewed literature and my purposed title of study. Thus, to fulfill the gap, I would like to study on this topic. So, I believed the topics for the dissertation is suitable for carrying out a research.

**Figure 1. Conceptual mapping**





After reviewing the different literatures, I found many gaps and lack of many related things which should be presented there. So, to fulfill those gaps, I have chosen this topic and developed the conceptual mapping as mentioned above in the figure 1.

In the process of developing conceptual map, I have extracted the essence of literatures themes. I also tried to know what the major problems are in learning mathematics among Chepang children.

## **Chapter – III**

### **METHODS AND PROCEDURES**

#### **Chapter Overview**

This chapter includes the process of the study which achieved objectives of the study and to get answers of the research questions. It describes the research design, approach, sampling of the study, study site, sample of the study, research tools, observation form and interview guidelines, quality standard, data collection procedure, data analysis and ethical consideration.

#### **Research Design**

Research design can be divided into fixed and flexible research designs (Robson, 1993). Others have referred to this distinction with ‘quantitative research designs’ The research design of this study is qualitative with ethnography approach. Ethnography is a specific form of qualitative inquiry. It enables us to research the realities embedded in a socio-cultural setting. Generally, it is understood that ethnography is a research process or method and product with cultural interpretation of the researched and the researcher's interpretation (Rai, 2015). To identify the problems faced by Chepang children, the research incorporated qualitative approach. Qualitative research can be regarded as ‘naturalistic inquiry’ in a sense that it is concerned in natural setting by trying to avoid any intentional manipulation and distortion of the environment of the informants by researcher.

The research design has been considered a “blueprint” for research, dealing with at least four problems: what questions to study, what data are relevant, what data to collect and how to analyze the results (Patton, 2002).. This study also investigates real-world behaviour as it occurs naturally whether it is at home or field of classroom or playground or in institution (Tames W. Stigler & Michelly Perry).

According to Patton (1990), qualitative research accepts that people know themselves best and can describe, interpret and talk about their own environment.

Qualitative research involves the studies and collection of a variety of empirical materials, case study and personal experiences. Life history, interview, observation, instructional and visual texts that describe routine and problematic moments and meaning in individual's lives are its tools for data collection. Qualitative research is a form of inquiry that explores phenomena in their natural settings and uses multi-methods to interpret, understand, explain and bring meaning to them. These data and information are collected through using tools such as observation, interviews and field notes.

Qualitative research studies things in their natural settings attempting to make sense of or interpret phenomena in terms of the meaning people bring to them. Qualitative research involves the studies and collection of a variety of empirical materials.

Qualitative research seeks out the 'why', not the 'how' of its topic through the analysis of unstructured information – things like interview, transcripts, open ended survey responses, e-mails, notes feedback forms, photos and videos. It doesn't just rely on statistics or numbers which are the domain of quantitative researchers.

Qualitative research is multi-method involving an interpretive, naturalistic approach to its subject matter. This means that qualitative researchers study things in their natural settings, attempting to make sense of or interpret phenomena in terms of the meanings people bring to them (Denzin & Lincoln, 2000 cited in Acharya, 2011, p.29).

Qualitative research is research involving detailed, verbal descriptions of characteristics, cases, settings, people or systems obtained by interacting with,

interviewing and observing the subjects. Qualitative research typically starts with use of a document review to collect data.

Qualitative research involves the studies and collection of a variety of empirical materials, case study and personal experiences. Life history, interview, observation, instructional and visual texts that describe routine and problematic moments and meaning in individual's lives are its tools for data collection. Qualitative research is a form of inquiry that explores phenomena in their natural settings and uses multi-methods to interpret, understand, explain and bring meaning to them. These data and information are collected through using tools such as observation, interviews and field notes

### **Research Approach**

There are different approaches for conducting qualitative research. Among them I applied Ethnography research approach. Ethnography aims to describe the nature of those who are studied through writing (Patton, 2002). Ethnography is a qualitative design in which the researcher describes and interprets the shared and learned patterns of values, behaviors, beliefs and language of a culture-sharing group (Harris, 1968, cited in Patton,( 2002). As a process, ethnography involves extended observations of the group, most often through participant observation, in which the researcher is immersed in the day-to-day lives of the people and observes and interviews the group participants. Ethnographers study the meaning of the behaviour, the language and the interaction among members of the culture-sharing group (Patton, 2002).Data collection methods are meant to capture the "social meanings and ordinary activities" of people (informants) in "naturally occurring settings" that are commonly referred to as the field. These can include participant observation, field notes, interviews, and surveys. Interviews are often taped and later transcribed, allowing the

interview to proceed unimpaired of note-taking, but with all information available later for full analysis. Secondary research and document analysis are also employed to provide insight into the research topic.

Ethnography relies greatly on up-close, personal experience. Participation, rather than just observation, is one of the keys to this process. Ethnography is very useful in social research. My research objective can be obtained by studying natural setting and can not be represented quantitatively. So, I used ethnography as my research approach.

**Ethnography** (from Greek, *ethnos* = folk/people and *grapho* = to write) is a qualitative method aimed to learn and understand cultural phenomena which reflect the knowledge and system of meanings guiding the life of a cultural group (Greetz, C. 1973). Ethnomathematics is the study of relationship between mathematics and culture. It refers to a broad cluster of ideas ranging from distinct numerical and mathematical systems to multicultural mathematics education.

D'Ambrosio (1983) used the resource of etymology to ethnomathematics. He used three modified Greek roots, namely *ethno*, *mathematics* and *tics* to explain what he understands to be ethnomathematics.

In this perspective, D'Ambrosio (1985) defined ethnomathematics "as the mathematics practiced by distinct cultural group, identified as, indigenous societies, groups of workers, professional classes and groups of children of a certain age group, etc".

Ethnography focuses on an entire cultural group. Granted, sometimes this cultural group may be small (a few teachers, a few social workers) but typically it is large, involving many people who interact over time (teachers in entire school, a community social work group). Ethnography is a qualitative design in which the

researcher describes and interprets the shared and learned patterns of values, behaviors, beliefs and language of a culture-sharing group (Harris, 1968, cited in Patton, 2002). As both a process and an outcome of research ethnography is a way of studying a culture-sharing group as well as the final, written product of that research (Agar, 1980, cited in Patton, 2002). As a process, ethnography involves extended observations of the group, most often through participant observation, in which the researcher is immersed in the day-to-day lives of the people and observes and interviews the group participants. Ethnographers study the meaning of the behaviour, the language and the interaction among members of the culture-sharing group (Patton, 2002).

Data collection methods are meant to capture the "social meanings and ordinary activities" of people (informants) in "naturally occurring settings" that are commonly referred to as the field. The goal is to collect data in such a way that the researcher does not impose any of their own bias on the data. Multiple methods of data collection may be employed to facilitate a relationship that allows for a more personal and in-depth portrait of the informants and their community. These can include participant observation, field notes, interviews, and surveys. Interviews are often taped and later transcribed, allowing the interview to proceed unimpaired of note-taking, but with all information available later for full analysis. Secondary research and document analysis are also employed to provide insight into the research topic. In the past kinship charts were commonly used to "discover logical patterns and social structure in non-Western societies". However, anthropology today focuses more on the study of urban settings and the use of kinship charts is seldom employed.

Hunting (1985) defines the ethnomathematics as "Mathematics used by a defined cultural group in preceding the relations with the problems and activities in content".

(Rai,2015) Ethnography is a specific form of qualitative inquiry. It enables us to research the realities embedded in a socio-cultural setting. Generally, it is understood that ethnography is a research process or method and product with cultural interpretation of the researched and the researchers' interpretation. However, the ethnographic research thoughts and traditions have been shifting from their original forms. The ethnographic research traditions originated from anthropology in the nineteenth century (Wall, 2014). This approach of qualitative research methodology has been widely used and adapted by the researchers from multiple disciplines such as sociology, education, and health and the researchers from multiple disciplines such as sociology, education, and health and so on. With the use of ethnography in wider areas, its traditions have been shifting with the influence of philosophical ideas emerged at different points of time. (Hammersley & Atkinson, 2007)

In order to accomplish a neutral observation, a great deal of reflexivity on the part of the researcher is required. Reflexivity asks us "to explore the ways in which a researcher's involvement with a particular study influences, acts upon and informs such research". In the face of these attempts of reflexivity, no researcher can be totally unbiased, which has provided a basis to criticize ethnography.

Traditionally, the ethnographer focuses attention on a community, selecting knowledgeable informants who know the activities of the community well. These informants are typically asked to identify other informants who represent the community, often using chain sampling. This process is often effective in revealing common cultural common denominators connected to the topic being studied.

Ethnography relies greatly on up-close, personal experience. Participation, rather than just observation, is one of the keys to this process. Ethnography is very useful in social research. My research objective can be obtained by studying natural setting and can not be represented quantitatively. So, I used ethnography as my research approach.

### **Sampling of the Study**

This is the qualitative research . In qualitative research mainly used purposive sampling, quota sampling and snow ball sampling, In my study I used purposive sampling .

### **Study Site**

My study was related to the adversities faced in learning mathematics by Chepang children, the site selection is also a very important task in order to find the appropriate information. tried to chose on Shree Kali Devi Lower Seconedary School Naubisa 1 Dhading district is the study site of my study.

### **Sample of the Study**

This is qualitative inquiry. So, the sample size in this study is small . According to Anderson, (et. al 2001,p.123) there are no rules for sample size in qualitative research (Anderson et. al 2001). Qualitative inquiry typically focus in depth relatively small samples, even single case (n=1) can be selected purposefully. So, the sample size of this inquiry depends upon the researcher what s/he want to know, what is the purpose of inquiry, what can be the credibility of the study and what can be done with available time and resources. So, the respondent of this study were 4 Chepang students, 3 their guardians and 3 mathematics teachers. As one of the non-probability sampling, I used purposive sampling to select relevant informants



that can be done with a specific purpose in mind, and that purpose reflected the particular qualities of people or events chosen and their relevance topic.

### **Research Tools**

One of the most important parts of study is data collection. There are many tools for the qualitative research to get the information from the people about their experiences, ideas and beliefs. Data were collected from school, Classroom Observation form and interview guidelines, written documents and previous researches. But the primary data were collected from the targeted students, guardians and teachers. The main tools used for the data collection. To prepare the observation form and the interview guidelines, I had developed indicators and sub indicators with the suggestion that are already made under the verification of experts.

### **Observation form**

Observation is the act of watching somebody or something carefully for a period of time, especially to learn something (Hornby, 2000). We observe things in our daily life in any sector. From the observation, we collect information and we reach to the extract decision or result. Observation is being popular from ancient times. Observation may be defined as systematic viewing coupled with consideration of seen phenomenon (Young, 1998). It has become a scientific tool and the method of data collection for the research. Under this method, the information was sought by the way investigators' own direct observations without asking from respondent. The classroom observation form was developed. Student's regularity, teachers' behaviour towards Chepang students, relationship between teacher and students, learning behaviour, teacher's guidance and motivation were included in the observation form. The observation guidelines have been given in appendix-A

## **Interview Guidelines**

Interview is also the method of which is the most commonly used to collect primary data. It is the means to express internal thought, interest, concept and thinking of a person. It is a tool to find out experience, internal thought of person according to their acting, looking and facial expression. The interview is a process of communication or interaction in which subject or interviewee give the needed information verbally in a face to face situation (Koul & Lokesh. 1997).

The interview may be regarded as a systematic method by which a person enters more or less imaginatively into the inner life of a comparative stranger (Young, op. cit., p. 214).

Interviewing is a data collection procedure involving verbal communication between researcher and respondent either by telephone or in a face to face situation (Eckhardt, K.W. and M.D. Ermann. 1977).

The interview constitutes a social situation between two people. The psychological process involves requiring both individuals mutually respond though the social research purpose of the interview calls for a varied respond from the two parties concerned (Palmer, V. 1928).

Interviewing is an art of extracting actual information form a related person about a particular thing. Interview is taken as a major tools for collecting information in educational research.

There are different types of interview according to the objectives and nature of the research that can be applied in different field. Cannel and Kahn had divided interview in two types as Organized and unorganized interview. Interview can be classified into four groups as informal conversation interview, interview guide

approach, standardized open – ended interview and closed, fixed response interview (Patton, 2002, p.288).

In my study the interview schedule was developed in semi-structured form. It was conducted among Chepang students, their guardians and mathematics teachers with a help of interview guidelines. The interview guidelines for Chepang students and mathematics teachers are given in appendix – B & C respectively.

### **Quality Standard**

Lincoln and Guba(1985) propose four criteria for 'naturalistic' research. Throughout the data collection and analysis process the following questions should be asked. How are the findings valid and authentic? Is the quality of the data rigorous? Terms used for examining rigor vary but include; validity, reliability, credibility, transferability, dependability, conformability, authenticity and trustworthiness ( Lincoln & Guba, 1985). Rigor in quantitative research has often been associated with the terms validity and reliability ( Ary et al., 2010). Since this research is framed within a qualitative paradigm, these terms are not used and in their place are the terms credibility, transferability, dependability and conformability.

### **Credibility**

This concept replaces the idea of internal validity, by which researchers seek to establish confidence in the 'truth' of their findings. Lincoln and Guba recommend several techniques inquirers may use to enhance the credibility of their research: prolonged engagement, persistent observation, triangulation. peer debriefing, negative case analysis, progressive subjectivity checks and member checking. To maintain Credibility of my research I tried to spend as much as time for observ, I ation and engaging with different Chepang people with their work. After getting information I

wrote notes, I asked similar types of questions to others people and trided to find real practices of from those information.

### **Transferability**

Transferability replaces the concept of *external validaty*. This criterion refers to the applicability of findings is one context(where the research is done) to other contexts or seeting(where the interpretations might be transferred).To maintain transferability I had explained mathematical practices found in Chepang community briefly.I had included photos of different cultural tools y using thick and practices in my research. I had tried to capture most of scenario by using thick description of observations, interviews and my meaning making.

### **Dependability**

This concept replaces the idea of realiability. This is the third standard for judging qulalitative studies and refers to the stability or consistency of the inquiry processes used over time. To mantis it I had presented the logic used for selecting people and events to observe, interview and include in the study. I will tried to maintain credibility and transferability to ensure dependability standard.

### **Comfirmability**

A fourth standard is confirmability, which refers to the quality of the results produced by an inquiry in terms of how well they are supported by informants (members) who are involved in they study and by events that are independent of the inquirer. This is sometimes referred to as the audit trail(a record of how decisions were made throughout the study).I am also a part of Chepang community so,to maintain confirmability, before concluding information I reviewed those information myself several times and sometimes I conform those information to my relatives before concluding information as well.

## **Confidentiality**

There researcher would hold all information that he might gather about the participants I strict confidence, disguising that particeipants' identity in all record and reports. As a researcher I notified my respondents about the objective of my research and about what of information I wanted from them and I didn't reveal the real name of people or place unless they gave specific permission to do so .They were convinced and make sure that there would be no harm for taking part in the study.

## **Data Collection Procedure**

I have go the related field of my study and collected information with the help of observation form interview guide line. The free interview was also taken with teachers as well as the parents of the Chepangs' children.

## **Data Analysis Procedures**

This study was based on qualitative approach. The collected information at first was categorized according to the category at the respondents and their different themes were given in the text at interview and observation note. text at interview and observation ,I used cultural differences and discontinuity theory, Bernetein's language code theory, and Vgotskian social constructivism theory. such that the obtained information more authentic. cross math or triangulation was adopted to maintain the quality standard. The data analyzed were interpreted by using the framework at the research. With the help of different theories and literature given in the literature review section.

## **Ethical**

One area that needs careful consideration in any research project is ethics. Creswell (2008) contends the unique contexts of research required 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 guidelines are about projecting the rights of the individuals participating in the study (Blaxter , 2006; Creswell, 2008). Individuals need to know the purposes and aims of the study, how the results will be used and that they have the rights 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 gaining permission before entering the site shows respect. Therefore the permission of the principal was sought and gained before entry to the school.

## Chapter – IV

### ANALYSIS AND INTERPRETATION

#### Chapter Overview

This chapter deals with to the analysis and interpretation of the data collected from the classroom observation and interview. As mentioned in the literature review section, I used different theories for the analysis of field data. In order to obtain the objective or to answer the research questions. I processed the data and classified them into two different topics viz. adversities faced by students in the mathematics classroom and factors affected to learning mathematics of Chepang children.

#### Adversities Faced by the Chepang Students in Learning Mathematics

The first objective of this study was to explore the adversities faced by Chepang children in mathematics classroom at primary level. In order to obtain this objective, the classroom teaching –learning activities of Shree Kalidevi Lower Secondary School Naubise1 Dhading were observed. The information were collected for answering the questions related to the adversities faced by Chepang 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 presented below.

I observed grade IV and grade V and collected information from the classes to draw out the condition of the teaching learning activities in the classroom.

#### Episode: 1

I observed the classrooms of Shree Kalidevi lower Secondary school, Naubise1 Dhading. The class was appropriate for teaching learning. Classes were well managed. Desks and benches were well managed in rows and columns. My first observation class was in grade five, There were 35 students in total. Desks and benches were arranged in two rows with 10 pairs of desk bench in each rows. The

benches were quite medium where 4 students could manage to sit. The classroom was the example of mixed culture. Different students from different community and different culture had gathered together to learn the mathematics.

When the teacher entered the class. This showed that the students were well disciplined and the schools have taught them to respect the teacher. After that, she started taking attendance of the students. Teacher stopped everything and started teaching. The teacher started to teach simple interest as his chapter. He revised some of the exercises that she had done the previous day and started to do some new exercises. She revised the formula to calculate the simple interest and wrote it on board and started to describe the problems that was solved on the board as follows;

*By the definition of the rate of interest ,we can write*

) *The interest on Rs100 for 1 year is Rs R*

) *The interest on Re 1 for 1 year is R / 100*

) *The interest on Rs P for 1 year is PR/100*

) *The interest on Rs P for T year is PTR/100*

*Thus,  $I = PTR/100$*

*Thus, out of four variables P,T,R and I,if the values of any three variables are given,the fourth variable can be calculated by using this relation.*

*We have,  $I = PTR/100$*

*The other relation are*

$$P = 100 \times I / TR$$

$$T = 100 \times I / PR \text{ \& } R = 100 \times I / PT.$$

*Started to describe the problems.*

*Calculate the simple interest on Rs 680 in 4 years at the rate of 5% per year.*



*Solution*

*Here,*

*Principal(p) =Rs 680*

*Time(T) =4 year*

*Rate(R) =5% per year*

*Interest(T) =?*

*By  $I = PTR/100$*

*We have,*

$$I = 680 \times 4 \times 5 / 100 = \text{Rs } 136.$$

*∴ The simple interest is Rs 136.*

From above classroom activities, it becomes clear that there was no proper interaction between teacher and students particularly students from the Chepang Cultural group in the mathematics classroom.

### **Episode: 2**

My second classroom observation was in grade five . There were more Brahmin, Chhetri, Tamangs and Lamas students in the class. Students with other castes were also presented there which made the class a multi cultural setting. Teacher entered the classroom . The Teacher wrote unitary method in the blackboard. Then she asked the students what they know about unitary method. The students respond without any hesitation .After then she defined the unitary method connecting with real life problem. She gave two examples about unitary method.

For example,

) *If the cost of 3 chocolate is Rs 60, then*

*The cost of 7 chocolate is Rs 140(Increase- increase)*

) *If 8 person need 4 kg of rice, then*

*2 person need 1 kg of rice (Decrease-decrease)*

*Then he wrote a problem from the exercise book and solved it explain step by*

*Step.*

*If the cost of 4 shirts is Rs 1400, what is the cost of 10 such shirts?*

*Solution*

*First, we find the price of one shirt or unit cost,*

*We have,*

$$\begin{aligned} \text{The cost of 1 shirt} &= \text{Rs } 1400 \div 4 \\ &= \text{Rs } 350 \end{aligned}$$

$$\begin{aligned} \therefore \text{The cost of 10 shirts} &= 10 \times \text{Rs } 350 \\ &= \text{Rs } 3500. \end{aligned}$$

*So, the cost of 10 shirts is Rs 3,500.*

This exercise which was quite difficult for the students. Teacher focused on the problem solving rather giving the lecture method. Students and teacher followed discussion method of teaching in that class to solve the problems. Teacher was quite friendly and students also acted as same. But some students were doing unnecessary things in the class and engaged in their own work rather than studying and understanding the problems. And teacher also 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 study.

I found most of the chepang students were present and stayed the hole period. Some of them were seem to be interested in mathematics class. They responded the teacher's question without hesitation. There was no differentiation between both Chepang and other students. But he did not give them special attention.

**Episode: 3**

My next observation was in grade four. The teacher entered the classroom and student greeted as usual. The classroom setting was multicultural. The teacher asked the students about the solved problem randomly whether the students had done all or not. During the period of my observation, he taught different concepts by using different strategies but not matched with child's interest and multicultural background. The classroom was of multicultural setting but he used monolingual. During the teaching period, the teacher used lecture method most of the time. He described lesson and problem from his own outlook not from student's view. During the period of my observation, I acknowledged that some of the students did not pay their attention towards the mathematics teaching. It seems that those students didn't understand what the teacher was teaching in the classroom or they couldn't follow the teachers' language or his way of teaching. Some of them actively participated in teaching process. My observation also found that the students became happy when teacher solved all the problems from the exercise. In this way, I say that the teacher didn't try to establish two way communications between teacher and students. It was only a teacher centered activity which couldn't help the students to participate in the classroom teaching so they couldn't understand the mathematics efficiently. The teacher should be aware of the fact that the classroom had multicultural setting and he should have solved only few difficult problems. He should have taught the skill of fishing rather than giving fish to the students.

**Episode: 4**

In the period of observation, next day the mathematics teacher was teaching the lesson "addition and subtraction of fraction" in grade four.

He was teaching the addition of like fractions.

Some examples recorded from the class were as:

$$\frac{1}{7} \Gamma \frac{3}{7} \times \frac{1}{7} \Gamma \frac{3}{7} \times \frac{4}{7}$$

He described that the fractions having equal denominator are called like fractions and to add them we just have to add the numerators by copying the denominators as same. She also described that the process would be same as for the subtraction as well. And then he gave some more examples as:

$$\frac{7}{12} Z \frac{4}{12} \times \frac{7}{12} Z \frac{4}{12} \times \frac{3}{12}$$

During the mean time one chepang student stood up and asked in mixed language for the process of addition of unlike fraction. Then the teacher replied by saying to do in next class. In this regard Bourdieu (1977) argues that the dominant culture portrayed as the natured and only culture either you share this culture or you are deviant is the same ways. If you share the dominant culture then you have at least a chance of share of success.

### **Episode: 5**

My next classroom observation was in grade five. Each class contained number of students 35. 14 pairs of desks and benches were arranged in two rows with 7 pairs of desk bench in each row. The benches were quite long where 4 students could manage to sit properly without any disturbances. There were 3 – 4 students sitting on one pair of desk and bench. The classroom was mixed cultured. Different students from different community and different culture had gathered together to get the education.

The teacher entering in the class was good looking and was not aggressive. The class room was a perfect example of cultural diversity. Students from different cultural, social and ethnic background i.e. Magar, Chepang, Tamang, Brahmin etc.

When she entered into the classroom . She was teaching the topic perimeter of rectangle. The teacher told the definition of perimater and wrote on the board.First of all teacher memorize the characteristic of rectangle by showing rectangle box and gave to student to measure its length and breadth. For example



Also teacher asked how many length and breadth of above box  
.i.e 2l and 2b

Perimeter represent the sum of all sides so,

$$\begin{aligned} P &= 2l + 2b \\ &= 2(l + b) \end{aligned}$$

The above activities of teachers and students match the theory of Piaget (1896) where he is concerned on how child can learn mathematics and what to teach in which situation is very important rather how to learn mathematics. According to this theory children are actively engaged in contracting their actions and the result of their actions that they make as much as science of that environment they can. In this regard above situation did not match the theory of Vygotsky (1978) the child understanding of how knowledge develops requires an understanding of social and historical origins of knowledge and of changes in that knowledge. Vygotsky argues that human knowledge originates in socially meaningful activity and is shaped by language.

I was intended to identify adversities faced by Chepang children in learning mathematics at primary level. From the classroom observation, I found many problems for Chepang students in learning mathematics. Now, I intended to take

interview of the students, mathematics teacher and parents to show significance of above results.

It is believed that cooperative and encouraging environment is very important effective communication, adversities faced and critical reflection. The literature reviewed so far, theories and field information laid emphasis in promoting cooperative environment for better classroom learning and removed the students mathematical problems. In this process, i found that present classroom have variations like some teachers were friendlier and some were not. If the teacher become students friendly, then the students learn mathematics better understanding and removed the adversities of students to learn mathematics.

### **Student's Response**

#### **Respondent A**

Sarita Parja was 14 year old girl, born in Naubise 9 Dhading was studying in grade five. Now a days she lives in Naubise9 Dhading District. It takes 30 minutes to reach in school from the home. She has six members in her family. They all believed in hindu religion Her father and mother both are uneducated. Her father and mother was farmer. She was known as a disciplined girl in the school. She is honest and never talks much with anybody. She is silent hard working and laborious student according to her parents and teacher. She is interested subject was Nepali and math in school and she is aim in life was to be a teacher. She had first position in class. She does her homework regularly and says that other friends help to complete their homework. I asked Describing about her mathematics teacher, she said

*“Our mathematics teacher is good. Sometimes he was absent and other students make noise when she is absent. Teacher teaches us in speed and he is non-Chepange. And it's being difficult for us to*

*understand teacher's language and sometimes she doesn't understand our language but she treats every student as same but she gives more priority to the intelligent and talent students. Our teacher gives us class work and homework regularly but it depends upon the mood of teacher about checking. She does check our homework regularly. she had more interest in mathematics the mathematics teacher helped him”.*

From the above views of students we can indicate the there is mathematics teacher is good. Thus, the teacher's main focus should be on guiding students by asking questions that will lead them to develop their own conclusion on the subject. In this regard Acharya (2015). Suggests that good teacher join self, subject and students in the fabric of life because they teach from an integral and undivided self, they manifest in their own lives and evoka in their students, a capacity for connectedness.

### **Respondent B**

SabinaParja was a 13 year old girl, born in Naubise 9 Dhding was studying in great five,she had been studing in the shree Kalidevi lower secondary school Naubise1 Dhading. She has seven members in her family. She is the second daughter of her family. Her main aim in life was to be a good teacher. Her elder sister studies in the same school in grade eight .All members of her house followed the hindue religion and spoke chepang language. Her father and mother work farmer. And her mother is uneducated.She is average student of her class. She is honest and speaks with everybody. She speaks more in comparison to other students. I asked describing about her mathematics teacher,she said

*“Our mathematics teacher is nor good or bad. She advises us to walk in a right way not in bad way. Teacher teaches us good, she sometimes*

*encourages us to study hard. Mathematics teacher is friendly and we don't feel afraid of asking questions to him because he always says that he will describe as much time as we need if we didn't understand any problem mathematics and cultural are related but in our school mathematics teacher don't integrate with our culture, so we feel mathematics is difficult".*

In the above view of student it is clear that if mathematics teacher integrated their teaching with student culture then it is easy to learn mathematics otherwise difficult, in this regard Archarya (2015). Explained that mathematics are strongly related with each other mathematics created culture and culture created mathematics.

### **Respondent C**

Sujan Parja was a 12 year old boy, born in Naubise 9 Dhading studying in class four. He had been studying in the Shree Kalidevi lower secondary school. All members of his house followed his Hindu religion and spoke Chepang language. He has five members in his family. He is the second son of his family. His parents are well educated. They have a shop near their house and his father stays there as a shopkeeper. He goes to school on foot. He doesn't have to do much work in house. Sometimes he stays in shop to help his father.

The source of his family income is only a shop. They depend upon the income that came from the shop. He says that they used to have a farm land once around Naubisa, but they sold that land and shifted from there. I asked my student what are the adversities faced in teaching learning mathematics? To the student he said that,

*"Our economic condition is neither poor nor rich. I get every basic thing that I need for my study. But sometimes I feel difficult while writing and speaking English language at school. And also I feel difficulty to communicate with my friends and teachers because of my*



*pronunciation and speech which produces Chepang tone. They tease me sometimes for being Chepang. I feel difficulty in understanding their language. Most of the Chepang student feels mathematics as a difficult subject poor economic condition, lack of educated people at home, due to the traditional culture and poor language. ”*

From the above views of students we can indicate that there is language discontinuity in the mathematics classroom and home. Due to the language used by teacher and other students in the classroom, they do not understand mathematics effectively. Chepang students get every facility they need from their home for their study but in some family they are found not keeping extra tuition classes for their children. It is also a problem to learn mathematics for Chepang children.

#### **Respondent D**

Rabina parja, was a 11 year old girl born in Naubise9 dhading was sturding in class four, She had been studying in the Shree Kalidevi lower Secondary school. In her family, there were four members; Her parents were engaged in agriculture. They went to the daly work to gain economic help. Rabina helped her parents both in household work and works outside the house, her main work was to take care her younger brothers and to work the household woirk when her parents went out of the home. She did not have good family environment to study.

The source of income was very poor. So the children could not get good education. Rabina parja had to do all the house works because her mother used to think that a daughter must do household work to be a cultured daughter.

I asked mathematics teacher about her learning. She told that

*She got more difficulty in learning mathematics, multiplication and word and languge problem et. She had to labour hard to get good*

*mark in mathematics. If he did not labour hard, mathematics may be the obstacle in her study. Talking about the mathematical instrument, her guardian provides her mathematical instrument*

In the above view of student it is clear that if mathematics teacher integrated there teaching with student difficulty in learning mathematics with language problem.

### **Teacher's Response**

#### **Respondent A**

Gita Koirala is mathematics teacher of Shree Kalidevi lower secondary school. She has been teaching mathematics in primary level up to 21 years. She says that more than 5% of the students are Chepang in his classrooms. She uses instructional materials while teaching in classroom. When I asked about the adversities faced by Chepang student in learning mathematics at classroom then she answered,

*“Chepang students are in average in the classroom. They are neither best nor bad in the classroom. Sometimes they have language problem, they don't understand what we speak and sometimes we don't understand what they speak. Sometimes they use their mother language in classroom for conversation. Most of the students have faced problems in mathematics classroom, everybody thinks that mathematics is difficult subject. And talking about Chepang students, there are many problems of Chepang students in learning mathematics at classroom.”*

From the above view teacher she give more emphasis for learn to chepang students but they couldn't good in mathematics learning. In the

classroom they are not regular attendance at classroom and not participate all classroom activities. Theoretically above expression contradict to view theory of B.F Skinner. She state that teacher should teach according to the interest of learner. Teacher always motivate their learner to give reinforcement of learner with related topic.

### **Respondent B**

Bimala Rupakheti is mathematics teacher of Shree Kalidevi lower secondary school Naubise 1 Dhading. She has been teaching mathematics in primary level 4 years. She says that few of the students are Chepang in his classrooms. She says that most of the Chepang students from that community are very weak in mathematics. They don't have a proper base for mathematics. But some of the selected students from the same community are extra ordinary, intelligent and talent in mathematics. We should not have to describe the problem again and again to them. Mathematics being difficult subject to understand by students, they have to give more time to practice mathematics for better result. The students from that community don't get time to practice mathematics because of household works. Most of the students have to help their parents in their household works and agriculture. Some have to stay in shop and some have to feed the domestic animals in time which doesn't give them time to practice mathematics.

When I asked about the language problem faced by Chepang students, she said, *"I think the students are facing the language problems because they don't understand other language properly and they don't know how to speak in nice Nepali and English language. They never ask any type of questions. If they were given a chance to learn in their*

*own language then they could understand easily and they could communicate without any pause”.*

From the above expression of teacher there is a language problem among Chepang students. Different ethnic groups and class diversity of communicate because they were speak their own local language and doesn't understand others language so, They have a problem in learning so that teacher should teach by making inclusive classroom where Chepang student get a chepang to read own their language. Vygotsky (1978) argue that of above expression social interaction play a vital role in effective learning so, teacher should provided an environment for a students to learn as a result students self give their own ideas and create new knowledge.

### **Respondent C**

Parbati bhattraï is mathematics teacher of Shree Kalidevi lower secondary school Naubise1 Dhading. She has been teaching mathematics in lower secondary level for five years. She says that few of the students are Chepang in his classrooms. She says that most of the Chepang students from that community are very weak in mathematics. They don't have a proper base for mathematics. But some of the selected students from the same community are extra ordinary, intelligent and talent in mathematics. We should not have to describe the problem again and again to them. Mathematics being difficult subject to understand by students, they have to give more time to practice mathematics for better result. The students from that community don't get time to practice mathematics because of household works. Most of the students have to help their parents in their household works and agriculture. Some have to stay in shop and some have to feed the domestic animals in time which

doesn't give them time to practice mathematics. When I asked about the major factors affecting in learning and language problem faced by Chepang students, she said,

*“I think the students are affecting factor that poor economic conditions, language, home environment, classroom environment, culture, social-economics, cultural diversity, less awareness of chepang parents, dominated group. They have their distinct culture which affects their children in learning. Facing the language problems because they don't understand other language properly and they don't know how to speak in nice Nepali and English language. They never ask any type of questions. If they were given a chance to learn in their own language then they could understand easily and they could communicate without any improbability”.*

From above the view of mathematics teacher various factors effecting for learning of Chepang student when we not tried to reduced this factors than Chepang. Student doesn't improved their mathematics learning because direct or indirect effect their learning. In this regard Archarya (2015). Explained that mathematics are strongly related with each other mathematics created culture and culture created mathematics.

### **Parent's Response**

#### **Respondent A**

Home Bahadur parja is neighborhood of Naubise 9 Dhading There are six members in her family. he is complex in farmer. he says her daughter is average in her study. he said,

*“Her mathematics performance is suitable. I am happy with it. She gives more than two hours for practicing*

*mathematics. She doesn't create any problem from her side. She never asks any questions to her guardian but she shares things about school with her mother. My daughter never denies going to school, she goes to school regularly and complete her home assignment regularly I meet her only during evening. As we don't have much time to interact with our daughter. They also help her in her study."*

From above parents view he has positive attitude towards her daughter education she is medium in her study.

### **Respondent B**

Sher Bahadur Parja is resident of Naubise-9 Dhading. There are seven members in his family. His father was labour in work in other field works. His mother seemed busy in household work as a housewife and she was also literate . He has three daughters, among them his first daughter is studying in grade 8 and second daughter is studying in grade five in Shree Kalidevi lower Secondary School. Shree Kalidevi lower Secondary School is a government school.

When I asked about the economic status, he said,

*"We have all basic things in our home, and we are managing our daily lives through it. We are not that much rich so that we could send our all children in Nepali medium school. But we are trying to improve our living standard and helping them to improve their study. We can't help our children to study because of illiteracy, and also we could not provide all the things that they need. School also won't provide the*

*financial help to the students. Being government school also, we have to pay some amount.”*

From above the parents view with his children his economic status has tried to make standard living and provided quality education for his children. It means that he wanted spend money for his children education.

### **RespondentC**

Mina parja is resident at Naubise 9-Dhading. There are four members in her family. She is involved in agriculture. She says her son is in her study class five. He studies up to 8.00 pm at night and wake at 6.00am in the morning. Furthermore She said,

*“I meet her only during evening. As we don’t have much time to interact with our son., we haven’t arranged home tuition for her son at morning time. She also help her son for the study. Mathematics is difficult subject. I am very said it. He does not practicing more times for mathematics. He create any problem from her side .he never asked any question to her mathematics teacher but he doesn’t shares things about school with her mother. Her family status is poor and her father don’t provides her every instructional material that he needs my son few times going to school he goes to school unregularly and don’t complete her homework”.*

Above the view of her she doesn’t give sufficient time for her son and also doesn’t manage tuition class. It clear that their son’s mathematics learning doesn’t improve by their economic status because they do not provided enough materials.

## **Factors Affecting Learning Mathematics of Chepang Children**

The second objective of my study was to find out the major factors that affect learning mathematics of Chepang children. In order to achieve these objectives, I had employed qualitative research and followed the ethnographic method. I collected data from different participant from Chepang ethnic group. Ethnographical approach is applied to deal in this objective. My research is based on Shree Kalidevi lower Secondary School, Naubise I Dhading From the interview of students, teachers and parents, it can be concluded that Chepang students have problems in mathematics classroom such as language, economic status, home environment, classroom environment, student's activities, teacher's activities etc. which has developed negative attitude to the Chepang students in the school psychologically for learning mathematics. The Student ,The parent ,Environment and Teacher find difficulties in teaching and learning mathematics. This is because of the students from the different cultural background. The culture of students and teachers also does not matches each other.

### **Home Environment**

House is regarded as the first school to every individual and elder family members as teacher in the house. The students learn how to behave educational information about their children. Student do not practice the exercise of mathematics at home.They only depend on classroom study. So they feel difficulties in mathematics practices. According to constructivism theory, teachers and parents are a part of the learning to motivate the learners. Those children who can't solve the mathematical learning they need to take help from their teachers, parents and peers.It is called scaffolding method. Parents also should be careful about their children's learning ability and parents frequently should take information from school and if



there is any problem to their children regarding their learning, they should be guided at home and motivate them. Hence, parent's education is one of the vital factors under home environment affecting freed Chepang student's learning at home.

*There is no money to feed the family, If we eat today there is fear for lunch tomorrow. In such hard to much situation of our economy, how can we send our children's to school? They work by themselves to earn some money. These Chepang children are grown up enough to support the family instead of wasting their time in school".*

*Parents view*

*It is very hard to buy any kinds of educational materials needed for mathematics because of desperate poverty in family. The main source of income in our family is labour and agriculture which is insufficient to fulfill our basic needs. Most of our rich friend takes extra tuition classes of mathematics but we can't afford fee for tuition. The scholarship of amount few of amount provided annually by the government is not enough to buy even education materials. We have to do labour on daily wage if we have to buy any kinds of educational materials because we are not given any amount from our parents."*

*Students view*

The view of parents and students clarifies that there is no time for practice their mathematical problems at home and this is the main reason why they are poor in mathematics subject. Home is the first school of the child. Those student whose home environment is appropriate to learn mathematics that children learn mathematics

easily if home environment is not suitable then the child feel mathematics difficulties.

In this regard Achary

### **School Environment**

School environment refers to all circumstances, infrastructure, rules and regulations, relate in the relationship between teacher and students within the school and activities that are conducted in the school. School is the place of Knowledge where students gain the light of education but for achieving the quality of education school environment has vital role in student's life. So, school environment must be suitable in every sense for excellent education system in the school. The physical facility provided by the school is an important part for student that affects in the learning capacity of the student and vice-versa.

### **) Classroom Environment**

Classroom management is an important factor of pupil's achievement and teaching success. Classroom management emphasizes that learning and teaching are matching activities where teachers can perform remarkable teaching activities so that students can develop their theoretical thinking.

From classroom observation, it was seen that most of the classrooms of government schools were very crowded with students. The classrooms in government schools were not fit due to the increased population of students. Most of the classes contained more than 50 students. Those students who were in the last rows were not able to see the board and did not give attention on the learning activities. Students were not controlled properly due to excessive crowd. Hence, classroom environment or management is one of the other factors to learn mathematics. Some of the students were found teasing others, gossiping with others, side talking, exchanging books, copies and stationeries. The teaching learning activities were disturbed in the classes.

In most of the schools, there is not section division in a class although the number of students is very high. Due to the over populated class, the seat planning of students was not properly managed. Specially, Chepang students faced many problems from arrangement of seat planning. They said students

*There are not any desks to keep book because all deskess and benches are used as benches only. We sit in benches keeping books on our lap. Those benches are also not enough to sit all students. We are very oftenly late for school so do not get chance to sitted, congestedly 4-5 studens in the same bench. We are altogether 50 student in a class and is very difficult to concentrate and listen the teacher”.*

They responded that other students disturb them as well by side talking, throwing stationeries and other cheats etc... during the class hour.

From above result, it can be said that classroom environment was affected, which creates great problem in teaching learning process. Appropriate classroom management makes the working conditions pleasant comfortable, interesting and enjoyable. In this regard Ogbu (2001) furthermore argues that discontinuity is also occurred in the area of language. Majority groups always dominate minority groups. It happens mainly due to the differences between teaching and learning strategies in the home. Similarly, since children learn in schools environment without natural context in their experience, learning may have no any significance to their everyday life.

Vygotsky's constructivism derived the development stages in the formation of conscious behaviour and he concluded that the children learn through environment. Environment plays vital role in learning process. So, the environment should be suitable for children to learning.

## J **Students' Activities in Classroom**

Students' activities in classroom directly affect to learning process. Student activities in classroom should be appropriate for learning. Activities of students in classroom were also observed. Due to the unnecessary activities of some students some problems were created. Most of the Chepang students felt mathematics as a difficult subject. Some of the Chepang students were not ready to read the lesson even though the teacher started the lesson. Most of the Chepang students were found not bringing mathematics book and copies regularly. Some were not following the direction of teacher. Some students were found copying home work as well as class work from their friends. Very few Chepang students were doing class work properly and they were assigned some difficult questions from their teacher too. Others Chepang students were not asked any questions and were found not interested in studying as well. Some of the Chepang students were found feeling hesitation in order to ask questions to the teachers or to other friends.

According to Vygotsky, cognitive skills and patterns of thinking are not primarily determined by innate factors, but are not the products of the activities practiced in the social institution of the culture in which the individual grows up. In his theory, rich social and cultural contents profoundly affect children's cognition. He argues that learning was not simple the assimilation and accommodation of new knowledge by learners. The school is mini society. Chepang children, as the alternative in the school, they have their own distinct language, culture and custom, tradition which directly and indirectly creates problems in learning mathematics at classroom

## ) **Teachers' Activities**

Teachers play vital role for educational process. Teachers are one of the main components of educational system. Their activities play important role for child. Teachers should handle the class applying suitable teaching method. Teacher is the mediator, he should create suitable learning environment for the students. School administration is also another important component of educational system. The role of school administration is important for implementation of curriculum. Classroom activities and extra-curricular activities depend upon school administration. Students are facing some problem from careless of school administration.

In my classroom observation, it was found that there were many problems for Chepang students due to the teacher's activities and school administration. Some teachers did not hear to pupils responses. They were not giving attention towards different learning theories. They rarely applied the discussion method to teach. They didn't give proper reinforcement to the students. While some teachers solved the problems, on board, some student were side taking, pinching, copying homework and distracting their attention from study. Teachers did not care about such activities. Most of the teachers focused only talent students for different activities. Weak students got less chance and got less reinforcement in the work. Some of the Chepang students used their mother language at classroom which created a problem in communication. It can be noted that language understanding is main problem for Chepang students. There was not proper communication with mathematics teacher and Chepang students in the mathematics classroom due to linguistic problem. And Chepang students were not in one to one interaction with teacher for sharing mathematics problems. It was seen in some classes that Chepang students were

dominated by Non-Chepang students in classroom, which created great problems for mathematics learning.

### **Languge Problem**

During my interview with the participants. I did raise the matter of language in learning mathematics. The participants responded in the following ways:

*I feel difficult in understanding other language rather than Chepang language .Everybody of my family speaks in Chepang language. The text books are available only in nepali and English language not in other language. It'll be quite difficult to understand the language other than chepang language.*

We couldn't find the book in our own language. It would be easier if we could read and write the in our own language. It is common that no any classroom is homogenous in any part of the world. Due to the medium of instruction, many students have to learn mathematics without understanding. Learning problems in coping with the language creates double problems in learning mathematics as was stated by the interviewee. For them, learning mathematics in other language rather than Chepang language is a problem for them. In such situation, they neither raise questions in the classroom nor do they involve in active participation in learning mathematics.

*I do not raise questions in the class because I do not understand mathematics and I feel assumed in front of other to speak*

Ogbu (2000) argues that discontinuity is also occurred in the area of language, through implementation of curriculum. If there is unmatched languages at home and school then the interaction may not take place. Language is also the major factor for the communication, which directly affect teaching learning process. In general,

Chepang students expressed their difficulty in understanding Nepali language. They have to struggle for both language and the contents.

Language might be the serious cause in learning mathematics. This would turn the participants to be silent sitters and non-responsive. Students may have feelings that they might get insulted by their friends and teachers when they speak in front of others. Such types of culture in learning mathematics may bring negative impact. Hence, language is one of the factors to learn mathematics.

### **Culture Problem**

Chepang students are more or less concerned with school problems and the problems of caste like alternative. The children with the similar culture to the culture of school may do well on school whereas the disadvantage minority children have poor performance in the school because their cultures are incongruent and incompatible with the culture of school. Since they are provided education with culturally different environments, they certainly face difficulties in acquiring skills and contents demanded by the curriculum through teaching/learning activities rather than they are culturally deprived in learning.

Ogbu (2001) furthermore argues that discontinuity is also occurred in the area of language. Majority groups always dominate minority groups. It happens mainly due to the differences between teaching and learning strategies in the home. Similarly, since children learn in schools environment without natural context in their experience, learning may have no any significance to their everyday life.

Hergenhahn and Olson (1997) according to Piaget, educational experiences must be built around the learners' cognitive structure. Children of the same age and from the same culture tend to have similar cognitive structure, but it is entirely possible for them to have different cognitive structures, and therefore require different

kinds of learning materials for different cognitive and cultural students. Since Chepangs have different culture and cognitive structure than other non-Chepang students, different culture and cognitive structure student have low achievement than other. Teacher should treat them by using individual instruction and child-centered method but above result is against this.

### **Socio-Economic Problem**

Socio- economic condition directly affects to students for learning activities. Those students who have good environment at home, whose family is educated and who get proper guidance at home. Social and economic condition of family directly affect to the daily activities of the students and their achievement.

Less number of Chepang students got scholarship from school but not sufficient. Government and non-government agencies had not provided any freeship and scholarship programme to the economically marginalized Chepang students. It was found from the interview of my respondents, that some Chepang students did not get sufficient time for doing homework at home; few students responded that their parents don't provide books, copies, dresses and other materials sufficiently. From this result, due to poor economic condition, Chepang students have to do household work at home and their parents are being unable to provide sufficient materials. Some students responded that their parents' economic condition is not strong.

Similarly, most of the Chepang students responded that government and non-government agencies didn't provide scholarship for them. From the above result, Chepang students didn't get financial support from any agencies. Poor parents are not in a position to meet the expenses of education. There are social-cultural factors equally responsible for the situation. Even minor children are kept engaged in household works. Children help parents in farming and domestic work.



Finally, it can be said that the socio-economic condition is not in favour of the mathematics learning and school environment is not conducive for the mathematics learning. The low socio-economic status, engaging on farming and other occupation and unmatched culture at home and school, negligence of parents, not sufficient learning opportunity at home are the main factors that obstruct in creating proper learning environment at home and at school.

As a researcher and i am also a teacher in school level, my experience shows that negative public image towards mathematics is another affecting factor to learn mathematics. Like wise, the social perception that mathematics is difficult, abstract and just for talent students, that is another affecting factor to learn mathematics. I came to realize through this study that due to lack of proper basic knowledge of mathematics in their school, Chepang children are losing their confidence to study mathematics.

## Chapter – V

### FINDINGS, CONCLUSIONS AND IMPLICATION

#### Chapter Overview

This chapter includes the finding, conclusion and the implication of the whole study. Whole research is conclusion is described from the study for the adversities encountered in learning mathematics by the Chepang children. A implication of the study is given for the area where this study can be applied.

#### Findings

On the basis of the analysis and interpretation of data the findings of this study are given below.

From the 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 Chepang students.

- i. There are many problems arisen in classroom due to classroom management and environment.
- ii. There is iow participation of Chepang students in classroom discussion, homework,class work was less.
- iii. The teaching methods used by the teacher was traditional.
- iv. Some Chepang students of village areas have language problems.
- v. They feel difficulty in understanding teacher's language Teaching.
- vi. Teaching materials have not been used at case school in mathematics teaching.
- vii. Chepang Dhading district are not that much economically strong that they can send their children at expensive school and also they can't have enough.
- viii. The major factors affecting learning mathematics of Chepang students were weak economic condition, social belif, tradition of the society,

psychological factor, distance of the school, family environment, gender bias, school environment, language problem, cultural problem, social economic problem. These factors are the obstacles or factors affecting learning mathematics of Chepang students.

### **Conclusion**

In the present situation, there are different problems faced by Chepang students in learning mathematics at classroom. There are different factors, which directly or indirectly affect Chepang children in learning mathematics. On the basis of the study of the field and findings, the following conclusion has been drawn.

- i. Some Chepang students cannot speak Nepali and English language smoothly.
- ii. Home environment, school environment, Classroom management and environment, language, school administration and problem related to socio-economy are the main indicators used to find out actual problems.
- iii. In some places they speak their own mother tongue.
- iv. So, their own language and school language are not matched and as a result they are far behind than other students.
- v. The interpersonal relation and classroom interaction between Chepang students and mathematics teacher is very low because of their language problems.
- vi. In short, home environment, school environment, domination of language, lack of interpersonal relation, low participation on classroom discussion, cultural discontinuity, poor economic condition, social tradition, parents education, household work, lack of motivation, are the main factors affecting in learning mathematics by Chepang children.

## **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 Chepang 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 will help to improve our mathematical pedagogy and solve the problems in teaching learning mathematics. The main implications of this study are as follows:

- (i) All the necessary education materials should be given from the school to the Chepang student
- (ii) The teacher should recognize the students' needs, their potentialities and adopt the student centered teaching methods. In this direction, this inquiry will applicable for the teachers.
- (iii) The curriculum planners, the text book writers and educational planners may get some useful information to improve their field.
- (iv) Though the school mathematics curriculum is entirely based on practical activities, teaching learning style is still based on rote learning. Due to the lack of teachers' mathematics pedagogical knowledge school mathematics is being a hard subject for Chepang students in particular and all students in general. So program of school mathematics teacher's professional development need to be re-think
- (v) Teacher should be go to the Chepang student's home and study their real situation. And there should be discussion with parents and teachers about their children.

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**Appendix – A**  
**CLASSROOM OBSERVATION FORM**

School's Name: \_\_\_\_\_ Address: \_\_\_\_\_

Teacher's Name: \_\_\_\_\_ Class: \_\_\_\_\_

Total No. of Students: \_\_\_\_\_ Total No. of Chepang Students \_\_\_\_\_

Date: \_\_\_\_\_

The researcher will observe the classroom under the following criteria.

**Classroom Management and environment**

- i. Classroom Structure
- ii. Size of Classroom
- iii. Space for Instructional materials
- iv. Cleanliness
- v. Seat planning of Students
- vi. Classroom Environment

**Student's activities in Classroom**

- i. Availability of Textbooks, copies and other instructional materials
- ii. Completion of class work on time
- iii. Students co-operation
- iv. Sharing problem in classrooms with students
- v. Sharing problem in classrooms with teachers
- vi. Interaction between teachers and students
- vii. Regularity of students

**Teacher's activities in Classroom**

- i. Regularity and Punctuality
- ii. Classroom Entrance
- iii. Revision of course
- iv. Voice command
- v. Politeness
- vi. Use of re-enforcement
- vii. Use of instructional materials
- viii. Encourage to students

**Appendix – B**  
**Interview Guidelines for Students**

School's Name: \_\_\_\_\_ Address: \_\_\_\_\_

Student's Name: \_\_\_\_\_ Class: \_\_\_\_\_

The researcher will ask the Chepang students to give information about the following topics.

- i. Do you like read mathematics book ?
- ii. Does you learning mathematics any problem?
- iii. Does your teacher describe the problems individually.
- iv. Do you bring all of your textbooks, copies and other related materials regularly?
- v. Do you complete you class work on time?
- vi. Opportunity to the chepang students to learn at home?
- vii. Do you feel difficult to understand English and Nepali language?
- viii. Relationship between Chepang and other students?
- ix. Do you take help from your friends for solving problems?
- x. Do you attend mathematics classes regularly?
- xi. Does your teacher ask questions frequently?
- xii. Do you teacher motivates you for practicing mathematics problems?
- xiii. Do you feel difficulty in language used by your teacher?
- xiv. Do you get equal chance in participation of classroom discussion.
- xv. Does your parent provide you sufficient instructional materials?

## Appendix – C

### Interview Guidelines for Teachers

School's Name: \_\_\_\_\_ Address: \_\_\_\_\_

Teacher's Name: \_\_\_\_\_ Class: \_\_\_\_\_

The researcher will take an interview with teachers to gather information under the following mentioned topics . (specially focusing on Chepang students)

- i. Do you use appropriate instructional materials while teaching?
- ii. Is your classroom noisy while running classes?
- iii. Do your students talk unnecessary things while you are teaching?
- iv. Do your students disturb you by asking unnecessary questions?
- v. Do the students follow your instructions in class hour?
- vi. Do they bring all of their textbooks, copies and other related materials regularly?
- vii. Do they feel difficult to understand English language?
- viii. Do they participate in extracurricular activities?
- ix. Relationship between chepang students and mathematic teacher.
- x. Thinking of teacher towards chepang students.
- xi. Difference between the learning behavior of chepang student and other students.
- xii. View of mathematics teacher towards the problem faced by chepang students in class room.
- xiii. Do you feel difficult to make them understand in English language?
- xiv. Do you make them participate in extracurricular activities?
- xv. View of mathematics teacher towards the affecting factor of chepang students.
- xvi. Do you describe the problems I individually to the students?
- xvii. What do you think about the Chepang students of your class?
- xviii. Do you feel that their behaviour towards you is different than others?
- xix. Do you feel difficulty in language used by them?
- xx. Does your school administration conduct extra classes for weak students?
- xxi. Contibution of Chepang students in the development of the lesson on mathematics class.
- xxii. Teaching method use in mathematics class.