

# Chapter I

## INTRODUCTION

### **Background of the Study**

Mathematics is most important subject. It develops Childs's knowledge. It is an essential part of life we cannot run our daily task without it. But in the present time it is going to difficulties for children. The present study builds on the teachers professional knowledge about mathematics learning difficulties on soon as students. It is also found that the adoption of a specific commercially available learning package (CALP Manuals & Exercise books used in the classrooms.) Plays & mediating role.

Nepal is a small country with an area of 1,47,181 sq. km. in the south Asia region having length of 885 km in east west direction and with a mean north south width of 193 km. Two great neighboring countries border it, the People's Republic of China in the north and India in the south, east and west. The country is located between 26° 22' and 30° 27' north latitude and 80° 4' and 88° 12' east longitude and presents a unique transition zone between arid, cold and sparsely populated Tibetan Plateau of China in the north and humid, hot and densely populated India in the south, west and east.

The fact that the population census (2011) registered 125 different caste groups, 123 language groups and ten religious groups is one small example of this cultural resource. Nepalese society is ethnically diverse and complex in phenotype and culture from Indian to Tibetan. The varied ethnic groups had evolved into district pattern over time. The major two groups in Nepalese society are TibetoBurmens or Mangolids from the north and the Indo Aryan from the south and there are many ethnic groups in Nepal living in different parts of the country with their own unique culture, language and religions. Tamangs live outside the rim of Kathmandu valley. A tribe known as the Tamangs can be found spread out in many districts throughout the country, but the main districts are Makwanpur, Kavreplanchok, Nuwakot,

Sindhupalchok etc. The total percentage of Tamangs among the total population is 5.8 (CBS, 2011). It is the fifth largest ethnic group in Nepal. The Sindhupalchok district consist 33.63 percent of Tamang among the whole population of the Nepal. The average literacy rate of the Tamang people is 42 percent whereas the national literacy rate is 65.9 percent. Tamang houses are clustered at one place to make up a dense village within which there are constructed many cobble, stone paths for movement in the hills, do not posses proper cultivable lands. The few Tamangs who inhabit the flat lands produce enough food for their personal consumption and look healthy and happy. But in comparison to those Tamangs, inhabiting the hills to the north is perpetually toiling as hired labors on others' farms and fields, and yet theylive hand to mouth existence. Their main occupation is farming, physical labor, driving etc. Like other ethnic groups, Tamangs also have their own culture, religion, tradition, values, and language. Tamang people are very simple. Their life standard is quite simple. Farming is the main occupation. Their main source of earning is agriculture, physical labor, domestic animal. Majority of Tamang people are poor and they feel difficulty in surviving that is why they cannot invest enough for education. (Gautam, 1994).

Mathematics is one of the most important subjects in school education. In all major (formal life or official work) and minor (household works) activities of life such as selling, purchasing in the market, arranging party, 'joining profession, celebrating marriage etc. ( Adhikary, 2006 ) indicates the importance of mathematics. The statement "Mathematics is the gate and key to all sciences." (Bacon) emphasizes its importance and use in many fields, mathematics has close relationship with human life and is related to many social subjects like economics, population, sociology, physics, chemistry. So, mathematics should be so easy that everyone can easily learn it. But, the statement of NCTM (1989): "The social injustices of past schooling practices can no longer be tolerated. Mathematics has become a critical filter for employment and full participation in our society. We cannot afford to have the majority of our population mathematically

illiterate. Equity has become an economic necessity." indicates the villain role of mathematics that filters pupil which generates negative attitude of the students toward mathematics. (Upadhyay, 2064)

"Mathematics for all" is the main theme of ICME VI. To make this slogan significant, every people should be mathematically literate. But different researches shows that mathematics is considered as a difficult subject and most of the student fear of it. Mathematics has negative image in our society. Children tend to view mathematics as a cut- and- dried, esoteric subject that arose full blown from the minds of a few great men in the past. It is not surprising that many students find mathematics irrelevant, develop fear and anxiety about the subject, and drop it as soon as possible. (Pandit, 2007)

So far Tamang math is concerned, it has some useful aspects, numeration is 20 based, they have own numeration system as kee, nee, pli, etc. for one, two, and three respectively. Large numbers are expressed in group of 20. The method of addition and subtraction involve the cumulative process. The concepts and process are directly related to real objects and of practical utility. The math that the students have learnt from their communities comes to interfere in their learning modern math in school. The Tamang students made errors in solving math problem in the decimal place value and in making groups of numbers over twenty. (CERID, 1990).

It is necessary to find out the difficulties learning of the Tamang students in mathematics. Cultural and ethnic perspectives in teaching mathematics may play a vital role in its popularization in every ethnic group such as Tamang tribal society. The cultural mathematical practices of Tamang community and their language are also kept in mind while teaching formal mathematics in modern school system.

## **Statement of the Problem**

The study was concerned with the study of difficulties in learning mathematics of -Tamang students at Primary level. The study also concerned the teaching methods used by teachers, use of instructional materials, interrelation between the teacher and the students. The study intended to find the causes of the high failure rate of Tamang students, reasons behind their high dropout rate. The researcher intended to find out the difficulties faced by the students of Tamang community in learning mathematics and compare their achievement with the students from other caste students. So this study attempted to answer the following questions:

- What are the major Factors that creates difficulties to learn make natives for Tamang Children ?
- Why do the Tamang children feel difficulties to learn mathematics at primary level?

## **Objectives of the Study**

The following were the objectives of the study.

- To identify difficulties faced by Tamang students to learn mathematics.
- To find the causes of difficulties in learning mathematics of Tamang students at Primary level.

## **Significance of the Study**

Mathematics is the essential part of human civilization. Nepal is a multilingual, multicultural, and multiethnic country. Every ethnic group has their own language, culture and traditions. They possess their own mathematical concepts more or less. The learning is more fruitful if one can take the education in his own language and the concepts match with the pre existing concepts in the child donated by the society. But, in practice we have monolingual policy, i.e. Nepali; the official language is used as the medium of instruction, which is too problematic for learning to those children who have different mother tongue. The dissimilar measurement code used in home and

school influenced learning mathematics. Impact of cultural difference in children's learning and school due to the unmatched conditions. of learning strategies of children and teaching style of the teacher seem to be a researchable topic. However, in Nepal no substantial study has been done yet in the area of mathematics education, so this study tried to investigate the causes of difficulties in learning mathematics of Tamang students at primary level and to identify the influencing factors in learning mathematics. The study also intended to find Out the factors behind high failure rate and high dropout rate of Tamang students.

The following were the significances of this study

- The Findings of this research would help to improve the mathematics achievements of Tamang students.
- This study would open the doors for the further study in problems of mathematics learning of Tamang students.
- Finding of this research would also help to the curriculum designer while designing the mathematics curriculum for them and other stakeholders related to the field of Mathematics Education.

### **Delimitations of the Study**

This is a case study about learning difficulties of TamangStudents. So the study have following delimitations:

- This study was conducted in only one school in Sindhupalchok District.
- This study was delimited to only five students from Tamang Community studying at Shree Jalpa Devi Higher Secondary School.
- This study was delimited to grade V students only.
- The study was carried out within the certain periphery and in particular area, so, its findings cannot be more generalized.

## **Definition of Related Terms**

**Learning:** A more or less permanent changes in behavior which occurs a result of instruction & practice.

**Difficulties:** In this study difficulty means those students who are unable to to understanding terms of condition of mathematics at primary level.

**Learning difficulties:** It is a general term which refers to children or students whose experience difficulties with their learning.

Learning difficulties in obstruction, in learning of mathematics in which students feel due to communication interaction pattern & behavior participation & learnings opportunities at home & school.

## **Chapter II**

### **REVIEW OF RELATED LITERATURE**

Review of related literature is an important part of research for the researcher because related literature helps and guides researcher to meet the motto of the study. A brief summary of previous researchers and the writing of recognized expert provide evidence that the researcher is familiar with what is already known, and with what is still unknown and untested Mani (1997), Since effective research must be based upon past knowledge, this step helps to eliminate the duplication of what has been done and provides useful hypothesis and helpful suggestion for significant investigation. This chapter describes the empirical literature, theoretical literature and the framework of this study.

#### **Empirical Literature**

Review of related literature is made in order to know what has been and what is to be done in the area to be studied. It is essential to review to the related literature to compare the study which provides strong knowledge about the related topic. Also a review of the related literature is the source of future study of the surveying in the whole research. This chapter describes the empirical literature, the theoretical literature and the framework of this study.

Pant (2006) in his doctoral dissertation entitled "A study of learning difficulties in mathematics among grade V students in the Kathmandu valley of Nepal." did a studied in the government and private schools of Kathmandu valley. He took the students, teachers, and parents of the selected schools as his respondents and found that the school related factors (quality of school program, quality of teachers, time allotment), class specific factors (quality of instruction, time for learning, opportunity of leaning, relationship with other students ), home related factors (parental help, sibling support), social factors (home culture and school culture difference, language of school and home ),

personal factors (time for learning & motivation ) are the main 'factors which influence the mathematics learning.

CERID (1993) did a study on "Meeting basic learning need of primary school children in Nepal" and the study concluded that verbal problem, algebra and geometry will difficulty area of learning for the students. Immune of the students was poor to comprehend the language used in the textbook as well as teaching technique was almost traditional without the objective to identify the basic learning need of primary school children of disadvantage and unprivileged population groups specially those rural and remote areas, in the context of Nepal.

CERID (1990) had studied first in the field ethno mathematics. The topic of the study was "A study on math concept and process of Rasuwa Tamang". The purpose of this study was to find the basic mathematical concept used by Tamang with no formal mathematics education, to identify traditional Tamang methods of mathematics operation and to find out the implication of Tamang processes and tone up the present learning situation. This study concluded that Tamans have their own system of counting, measurement and problem solving. Tamang numeration system is based on twenty. They have their own geometrical concepts and based on the shapes and structure patterns of object existing around.

Joshi (1997) in his study entitled "Determinants of Mathematical Achievement using structural equation modeling" Found that regional disparity and type of school, students characteristics, such as gender, class attendance, achievement, motivation apart from variables related to learning environment (e.g., parental education, and parents pressure for education), school environment (e.g. teachers qualification, and teaching experience) and peer interaction etc having positive effect on achievement of secondary school mathematics. More specifically, the personal factor such as age, sex, motivation, effort and prior knowledge, regularity, interest, interaction with peers, the environmental factors such as teachers qualification, teaching aids,



time for homework checking, school environment, type of school, physical condition, distance of the school, home related factors like parents educational background, interaction between parents and children, parental support children such time given to guide the children, regular communication with the teacher will found to have been the major determinants of students learning.

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

Ghimire (2005) did a Study on "Difficulty in learning Algebra a Case study of Blinded Students". The objectives of Algebra & to identify the difficulty on Classroom practicing. This study was conducted with the sample size of four blind students from four different schools. The children were selected on the basis of simple random process. Different tools such as case study, observation, interview & written test were applied to identify their learning difficulties on Algebra & inclusive education approach. The study found that the performance of blind student was very poor. They can define their concept & can solve such problems, which are very short & easily can remember to mainly the problem can solve on step. They were able to only odd, subtract multiply of simple & very short Algebraic terms but unable to division & they have to the limited knowledge about the factorization HCF & LCM. The major difficulties of the blind students were found as to develop clear concept on subject matter, to write Algebraic terms & to solve process of Mathematical Problem in Braille Script. The lesson learn from this research can be used in special education. All these required a serious thought while making decision about curriculum, regarding materials & pedagogical process.

## **Theoretical Literature**

Theories which can be used for the analysis and interpretation of the data are classical social theory of learning, cultural lag theory, everyday life theory and cultural difference/discontinuity theory etc. Some of the theories the researcher reviewed related to the research topic & relevant to the study are summarized below:

### ***Cultural Difference and Discontinuity Theory***

Ogbu (2000) delineates about the cultural difference cultural discontinuity theory. That deal with the problems in children's learning caused by the difference and discontinuity between the culture of home and school. Those children, whose home cultures are much similar to the cultures of the 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 they do not have enough attention in their learning and do not get much recognition of their cultures and they have to work achieving learning outcomes compared to the children with good matched.

Ogbu (2001) emphasizes that learning is not only as the product of the cultural and language differences but rather the nature of the relation between the culture and language of minority/ disadvantaged and dominant groups. The dominant group controls the school system through implementing their curriculum, and using their language as the only means of instruction. Regarding cultural difference, identity and school learning, he has put the examples on the case of the United States of America (USA). Identified the features of cultural differences mainly of two types of minority groups:

1. Autonomous,
2. Voluntary,

According to Ogbu, (2000) autonomous minorities are minorities in number, for example Jews and Amish in the US. They do not have the problems of

cultural differences and language since they have similar culture and language to the majority American who have controlled the education system in the US. . Voluntary minorities are people who have migrated voluntarily expecting a better life, opportunity and more political freedom in the US or in any other society. They usually encounter the problems in the schools mainly due to cultural and language difference. Lack of orientation about how the schooling system works in the US may create problems for those voluntary minorities.

However, he developed the theory of cultural difference on the case of US, it might have implication to this study that is related to cultural discontinuity and learning difficulties in mathematics of Tamangs who also disadvantage group in terms of culture of discrimination, domination and backward from mainstream. Mainly the Tamang children hesitated to interact with other children in the school as well as in the community due to the socio-cultural reasons that they are still humiliated by labeling as Bhote and uncivilized Janjati. Their participation with other caste people that obstruct their learning. Similarly the Tamang children in the home learn by observing and engaging in the works of their before members of a given population come into contact with existing culture of dominating group of population.

Similarly a society, on which caste like minorities due to caste like stratification and discrimination is found, comprises secondary cultural discontinuity. Due to collective institutional discrimination and display like school system, they tend to exclude from the mainstream with social and economic problems that leads their lives to miserable condition. In addition, such subordinate groups under caste stratification with discrimination do not get opportunities and access to privilege, rewards, or positions considered. as prerogatives of dominant group because of already fixed socio-cultural system or legal mechanism which are made by the dominant group. In these circumstances, the children from disadvantaged caste tend to develop coping behavior and the attitudes that are different to school culture that obstruct their learning (Ogbu, 1982).

As the present research question is considered, it is helpful in finding the learning difficulties in mathematics and participation of Tamang students. Necessary information was collected from the observation of Tamang student's behavior in the classroom, on playground, in community; inquiring the children and the parents about their cultural practices and preferences; carried out in depth study on the children and parents about their cultural aspects that contribute to their schooling. And why do they feel difficulty to learn mathematics at school and what are major factors that creates to learn difficulties native for Tamang Students was also investigated.

### **Conceptual Understanding about the Study**

This is a case study, tries to identify the difficulties and causes of difficulties in learning mathematics of Tamang student of primary level. This study mainly based upon cultural discontinuity and cultural difference theory. The following framework in difficulties in learning mathematics is purposed for this case study depending upon related literature and cultural difference and discontinuity theory. The following framework was purposed on the basis of helpful and exposing the difficulties of learning mathematics among Tamang Students of the selected school at primary level.

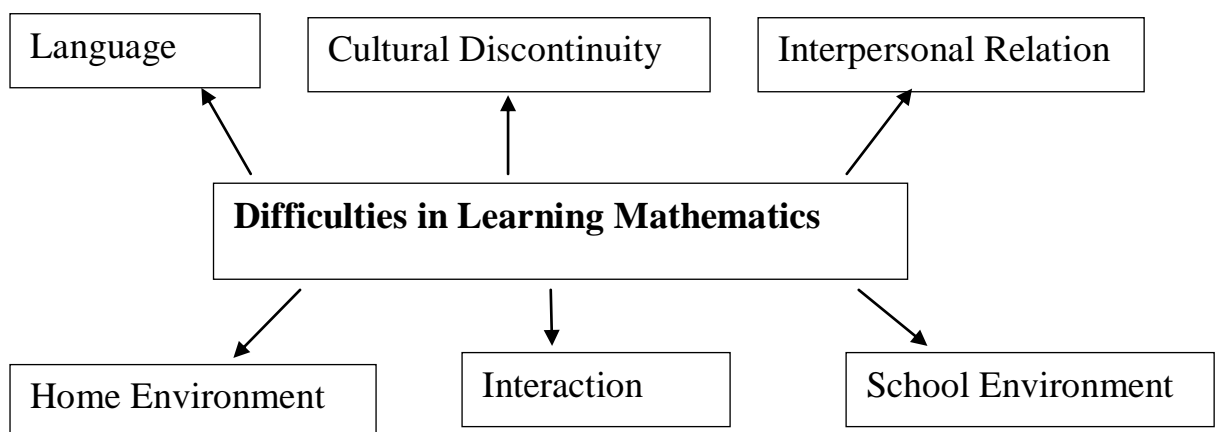


Fig. 2.1: Theoretical Understanding of Difficulties in Learning Mathematics.

## **Chapter III**

### **METHODS & PROCEDURES**

This chapter includes the procedure adopted in the study, which was carried out to achieve the objectives of the study and to get answer of the research questions. It describes the design of the study, site selection, selection of the case respondent, tools used to collect the information, method used to collect the information and data analysis procedures.

#### **Design of the Study**

This was case study based on qualitative research design that especially concerned with exploring meaning and the way that people understanding about things. So this study was qualitative research and hence descriptive in nature.

#### **Site Selection**

This study was done in a school situated in BhotechaurVDC of Sindhupalchock district. The historical geographical area of Tamang is the interested area of the researcher where the researcher was working as a teacher at secondary level since more than six months. The researcher was find that difficulties in learning mathematics Tamang students at Primary level comparatively weaker than other caste students in mathematics. So the Tamang students studying in grade V of Jalpadevi Higher Secondary School was selected as the key informants. The selection of the school was done in purposive manner.

#### **Sample of the Study**

This was qualitative inquiry so that the sample size in this study was not fixed. According to Andersion, there were no rules for sample size in qualitative inquiry (Andersion et al 2001, p. 123). So the sample size of this study depends on the researcher what s/he wants to know, what the purpose of

inquiry. There were 60 Tamang students enrolled among total 400 students studying in the school. The researcher selected the students of grade V purposively as the researcher's convenience. The researcher selected only five students as his respondent to which the researcher found to get right information so as to meet the objectives of the study. As one of the non-probability sampling, the researcher used purposive sampling to select informants that could be done with a specific purpose in mind, and that purpose reflects the particular qualities of people or events chosen and their relevance to the topic. The parents of the case- students, the mathematics teacher and the head teacher of the school were also taken as the respondents.

### **Tools**

Qualitative methods consist of many kinds of procedures to get information during the research. The followings were the main tools used to collect the information for the study:

1. In-depth interview
2. Observation form
3. Written documents

The in-depth interview was conducted for students to find the difficulties of Tamang Student and class observation was conducted. Tools were using form first Falgun 2071 to 15th Chaitra 2071. The Researcher studied those selected Tamang students for about 45 days. The data from, interviews consisted of direct questions to people about their experiences, opinions, feelings and knowledge. The data from observation consisted or detailed descriptions of people's activities, behaviors, actions and full range of interpersonal interactions and organizational processes that of observational process, human experiences. And the data from document analysis consisted of experts' quotations, program records, memorandum and correspondence and reports, personal diaries (Best & Kahn, 1999).

## **Methods of Data Collection**

The data and information were collected through using tools: uncontrolled observation, interviews, and field notes. The objectives of this study was to identify the causes of difficulties in mathematics learning of Tamang students and to identify the impact of home environment in learning.

The researcher took in-depth interview of all five key children using personal diaries, from, files. After the interview of the key children, the researcher also interviewed with the teacher who taught mathematics to them. The interaction with the above respondents are carefully listened and noted properly. The focused children's attendance regularity, participation in extra activities and other behavior was noted by reviewing the school files and records.

Researcher informed them that after observing their class work and homework the researcher would find the cause of difficulty on mathematics learning. And the researcher would discuss/interview certain questions related to their difficulty on learning mathematics and personal background. Thus the researcher studied those selected Tamang students for about 45 days. In this time the researcher observed them carefully how they learned and what they feel difficulty on learning mathematics. For this study, the researcher prepared the individual students record of all key students studying at grade five and analyzed those files based on the criteria. On the basis of observation form, the researcher observed mathematics classroom and behaviors of the key students. Mathematics teacher & other students in the class will observe carefully & noted everyday.

Observation is one of the most useful tools for the data collection in anykind of research study (K.C 2000) since the direct observation had the advantage of putting researcher into first hand contact with reality. It was usually possible to observe only small number of industrial or groups. To get the required information regarding mathematical concepts, the researcher

observed them individually as well as collectively during their work at school playing with peers, interacting with teachers.

### **Data Analysis Procedures**

Data analysis is the systematic process of presenting & showing its effect. The analysis of data is important things while we were preparing research report. In this study primary data were presented&analyzed. The collected data from primary source by interview & observation were analyzed & interpreted by using descriptive method.

To manage the huge data obtained by using the unstructured interview schedule & observation form, their information at first were categorized were according to the category of the respondent the categories was key children, math teacher head teacher & parents of the key children. After those different themes such as cultural discontinuity, interaction, interpersonal relation, home & school environment language was given in the text of interview & observation. The different views & the behaviors of respondents related to the above mentioned themes were collected together with the theme & they were explained in their perspective. The data thus analysis are interpreted by using the framework the researcher developed & matched with the theory in literature review.



## **Chapter IV**

### **ANALYSIS AND INTERPRETATION OF DATA**

This was a case study related to the learning difficulty of Tamang children at grade five of Sindhupalchok district in mathematics. The main objectives of this study were to identify the causes of difficulties of Tamang students and to identify the impact of home environment to learn math at school. The main tools used for this study were interview schedule, observation form and related published and unpublished school documents. The main respondents of this study were focused children, parents, mathematics teacher and the Headteacher of the school only one school was chosen for this study purposively.

This chapter includes the analysis and interpretation of Data. The data obtained for the study were presented in terms of following topics: cultural background of Tamang children, language, interpersonal relation, teacher student interaction, environment at home and school. The collected information at first was categorized according to the category of the respondents and different themes were given in the text of interview or the observation note. These themes were considered as a code and the similar code version of respondents were collected together and explained in their perspectives. The home environment and other details were obtained by taking interview with their parents & their teachers and Head Teacher.

## **Cultural Background of Tamang Children**

Culture is the most distinctive attribute of human race. Because of this quality, today human being is able to protect, transfer, and improvise the cultural traits as per its necessity. Culture is not a pre-constituted object but must be created through human intention and action. The human is the main actor beside the creation, and interpretation of the culture; by virtue of human cognition, today's civilization is possible (Katherire, 2004). Culture is a human creation and use of symbol and artifacts. Culture may be taken as constituting the way of life of an entire society, and this will include codes of manners, dress, language, rituals, norms of behaviors system of belief. Sociologist stresses that human behavior is primarily the results of nurture rather than nature (Dictionary of Anthropology). Tamangs were one of the oldest ethnic groups of Nepal who were believed to enter in the country from northern part of the country. For this reason they were believed to belong in TibetoBurman family. Tamang language, their culture, religion, writing script etc are highly influenced by Tibetan culture. Sindhupalchock district is one of the historical places where Tamangs had been living since the ancient time and they had developed their own culture tradition. Their main occupation is farming, physical labor, driving etc. Like other ethnic group, Tamang also have their own culture, religion, tradition, values, and language. Tamang people are very simple. Their life standard is quite simple. Farming is the main occupation. Their main source of earning is agriculture, physical labor, domestic animal.

Majority of Tamang people are poor and they feel difficulty in surviving that's why they cannot invest enough for education (Gautam, 1994). Inside the cultural practices directly stimulate the mechanism of society and simultaneously affected the cognitive psychology of the human being. As a result every activities of human race are shaped and determined by existing cultural pattern of his/her community/society. Therefore, the existence of human beings and cultural attributes is analogous to each other. Specially speaking, one of the major concerns of this study is to analyze how far the existing cultural practice is supportive to learn mathematics of Tamang children.

### **Description of the Key Children**

The brief description of the key children which the researcher interviewed and observed during the study is given below:

#### **Respondent A**

Respondent A was a 10 years old boy studying in grade V. He lived in Nibugaun of Bhotechaur VDC ward no. 5. It took twenty minutes to reach school from his house. He had six members in His family. He had very weak economic condition. To go to school, he had to finish all his household works. he said, "*Before going to school I have to finish all the works such as getting saula for animals and other household work. Our member depends upon the farming but we have no sufficient land We have difficult to manage food and other problems. So I have no sufficient time to study in home.*" He reaches school quite late every day. He becomes usually absent in roll call in his school.

Because of weak economic condition his father couldn't get any formal education but he was skillful in running the house by doing simple works. He work in field, weaves doko, dalo, nanglo, ghoometc of bamboo strips or nigalo strips. But his income was very low. So, he could not give enough facility for his son required for the proper educational environment. Similarly, his mother was unable to get formal education. It was because in his time, son were not given education. His mother was housewife. She helped her husband also. After reaching school, she got engaged in his study. During the observation in the field the researcher came to know, the Tamang students had silence home culture, for example the respondent used friendly language in his class like yo kasari bhayo bhandeuna sir. The teacher did not like this language, teacher expected respective language like: "yo kasari bhayako bhanidinusna sir" Because of this, the teacher didn't care him. He also could not ask question to the teacher where he did not understood. He used Tamang language in his house and community. He had to use Nepali as the second language. He said, *"Mathematics is the hardest subject for me. Arithmetic , verbal problem in algebra, and geometry are difficulty for me."* The researcher noticed that he had problem in solving verbal problem of algebra He had also difficulty in addition of the fraction  $\frac{2}{5} + \frac{3}{7}$  but he easily added the fraction  $\frac{2}{5} + \frac{3}{5}$ . He also fails to draw the different angles by using compass, protractor. As an observer the researcher asked the mathematics teacher about the difficulties faced by the respondent. He told me" he got more difficulty in learning algebraic expression, multiplied by minus (-) sign, word problem etc. He has

told me that he got difficulty in learning mathematics because in his house his father and mother did work with by taking simple and not fixed measurement. But in school he had to use fixed measurement using compass, protractor etc. he gets more theoretical knowledge rather than practical knowledge. This was his main difficulty.

### **Respondent B**

Respondent B was 10 years old girl studying at grade V. She was born in Bhotechaur 5, Nibugaun. It took 25 minutes to reach at her home from school. There were seven members in her family. Her father had a small shop in village. Apart from the shop, he worked in milk dairy. He collected the milk from the village and sent to Kathmandu every day morning. It was seemed that her father was always busy in work. The economic condition of her family was not bad. But her father used to drink alcohol regularly. Every evening when he came to home, he used to quarrel with her wife in spite of giving support to her children's study, its bad impression has seen clearly on the children's face. The children generally seemed too afraid of their father. It was because the parents were uneducated and they do not know the importance of education. The researcher asked to her father why he used to drink the answer given by her father was: "It is our tradition that we are "MatwaliJati." Alcohol is our common beverage like tea of other community. I cannot leave to drink because it becomes my habit without which my mind cannot work properly." Because of her father's drinking habit, the educational environment was not so good at home. The respondent said "I understand mathematics at class but I could not

remember for long time." She could not give so much time for study at home. She had to help her mother in household work as well as look after her small brother. She had not enough time for practice in mathematics. The home language was Tamang language. She said "I cannot speak Nepali language properly in school. So I feel difficulty to ask question to the teacher at school. My parents are uneducated. They are quite unfamiliar with our mathematics. There is no proper use of school mathematics in my daily life. I feel difficulty in verbal problems, and algebra etc." From the above views the researcher concluded that the verbal problems of algebra, multiplication of algebraic expression involving (-) sign, construction of angles by using compass were the common problems for the student.

### **Respondent C**

Respondent C was a Nine years old boy studying at grade V. He lived in Bhotechaur- 5 Nibugaun. His family follows Buddhist religion. He was very much curious and intelligent. He did not forget to do his homework as he was good student. He attended all the classes. He always participated in extra activities also. He chat with his classmates and did not show much interest in games. He did not like to do the work as others did in the community. His father was educated and was a political activist of the village level. His father generally becomes busy in the work of his political party so he was not able to give enough time to his children at home. He agreed that his son was talent children in study but he was weak in mathematics. According to him, the reason was the cultural difference, language discontinuity, and inadequate

parental help his mother uneducated housewife and could not help him to learn. He wanted to participate in all extra activities organized in the school, but his poor language code always humiliated him and he felt dominated in school, due to his language problem. He had not the problem of school needed materials like books, copies, pen etc. He took tuition classes regularly as he was weak in mathematics, the tuition classes helped him in learning comparison to other Tamang children. He had good opportunities in learning. So he was forward than other Tamang students. He said "Addition, subtraction, and multiplication of algebraic expression are difficult for me.

some examples are

Addition of Following

$$\begin{aligned}
 &2x+3y+4z+3x+3y-2z \\
 &= (2x+3x)+(3y+3y)+(4z-2z) \\
 &= 5x+6y+2z
 \end{aligned}$$

Instead of getting right answer  $5x+6y+2z$

Sum of following a & 3

$$\begin{aligned}
 &\text{As } (a)+(3) \\
 &= 3a
 \end{aligned}$$

Instead of getting right answer  $a+3$

These examples indicate the mistake occurred in addition and subtraction. From the above description, it is concluded that although the respondent had good economic condition, his family background was far better in comparison

to other students, he had good parental support, but his difficulty in math may be caused by the teaching strategies applied by the teacher.

### **Respondent D**

Respondent D was a boy of 11 years old studying at grade V. He lived in Bhotechaur 5, Nibugaun. He studied in class V. There were Nine members in his family. His father had died in a road accident three years ago when Pemba's age was eight years. his study was not so good because he had to work in his home. Farming, doing labor work and earning money was his duty. He said, *"My father had died before three year when I was studying in class two. After my father's death I could not give continuity to my study. I had to work in field, earn money by doing labor. I had joint family to cut grass for our domestic animals. So I could not go to school regularly. I am poor in mathematics which I think it is difficult subject for me.*

His plan was to study up to class six. He was not interested in study. He did not do homework given by the teacher. He said, "I have no time to do homework because I have to engage in household work. I have to finish all the household work before going to school. He said "I know the importance of education but my family environment is not in favor of study that's why I cannot complete my study." There was not separate room for study in his house. The above explanation indicates the main cause of dropout rate of Tamang students. Poverty was the main cause which hinders the learning of the Tamang children. From the observation and interview of the respondent, the researcher concluded that mathematics is the most difficult subject for the respondent. The reason



behind difficulty was the student's unfavorable home environment, poverty and lack of guidance for his study. The respondent had not get enough opportunity to study at home, lack of motivation, unconsciousness about the importance and use of mathematics in real life etc. are the causes of the difficulty in math learning. So the researcher concluded that the teacher should motivate the respondent toward the use of mathematics in real life. The teacher had to relate class teaching with real life situation giving enough examples concerning the mathematical concepts and practices of the community and should maintain friendly behavior with the student.

### **Respondent E**

Respondent E was 10 years old girl studying at grade V. She lived in Bhotechaur-5, Nibugaun with her father, mother, brother and sister. There were five members in her family. Her father was an educated man but mother was uneducated housewife. They used Tamang language and followed Buddhist religion. Her father was a social worker and familiar with Tamang culture, tradition and values. He was against the acculturation of Tamang culture and believed that Hindu culture interference in Tamang community was the cause of cultural decline. She was a regular student in class and she always participates in extra activities also. She could not use respective formal language in school, so the teachers did not care her learning. She said, *"All the teachers in our school speak Nepali language. They are not from our community. I feel hesitation to ask question directly to the teachers. Instead of asking to the teacher I feeleasy to ask my friends in our own language. If there*

*will be Tamang teachers in our school, it would be better for me to ask question in my language. Mathematics is difficult subject for me."*

She had difficulty in verbal problems of mathematics. She could not ask the question to the teachers which she did not understand. But if she felt difficulty in class she preferred to ask her friends in Tamang language. This activity was not acceptable to the teacher. So student teacher interaction was not amicable. She had enough time to study at home but the language difference and cultural discontinuity were found main cause of learning difficulty. She did homework given by the teacher but many mistakes were found in her work. The standard measurement unit used in books had no practical use in her house, mana, pathi, dharni, were frequently used in her society. Twenty based counting system and Tamang counting like kee, nee, som, pli etc. which she had learnt at home had no application in school curriculum. Thus cultural difference and discontinuity causes the ,learning difficulty in mathematics. The researcher concluded that the mathematics teacher should maintain the friendly environment in mathematics class, teaching should made fruitful by use of sufficient instructional materials, teaching should relate with real life situation, prefer to use the examples of mathematical concept practiced among Tamang community.

### **Cultural Discontinuity at Home and School**

Since the everyday lives of the Tamang children were not given emphasis for their learning in school practices. They always consider school

as an artificial and incompatible institution so they neither assimilate nor accommodate into mainstreaming school system. In home they learned by observing and doing things side by side. But they did not get chance of that in school. There were great differences between the lives of Tamang children at home and school practices. As the Tamang children had to engage in household works, they did not have sufficient time to study at home. Teachers did not ask these types of children about their home environment. Tamang children felt difficulty in learning theoretical knowledge as they practiced practical works in their home like farming in field, working as a labor to earn money etc. They use their own counting system: kee, nee, som, pli etc. This discontinuity between everyday life and school practice made Tamang children to feel complicated in learning mathematics. Since the culture of home and school was different in terms of language, teaching style, and the everyday lives of Tamang children at home and school was also different. In this situation they had to adopt the learning strategy differently.

Consequently they faced problem in learning mathematics. Since the learning strategy of the children at home was discontinued at school. Here according to the theory of cultural discontinuity, Ogbu (2000, 2001) argued that due to the cultural discontinuity between home and school, children face problems in learning mathematics. Environment of home and school affected the learning of children. To sum up, the discontinuity between the culture i.e.

environment of home and school discouraged the mathematics learning of Tamang children.

Teacher never gave proper attention separately to the Tamang children. Tamang children learn at home and school along with different influencing factors. Home is treated as the first school of human being. So, home environment, school environment and parent's behaviors etc play an important role, similarly the behaviors of society and teachers also play the vital role for Tamang children in learning mathematics.

The researcher found the learning strategy of Tamang children like observing activities and involvement in the real life activities are discontinued at the school that affects their learning. Most of the children had difficulty in learning mathematics in same area and difficulty was due to their cultural discontinuity. Their weak economic condition which forced them to do different works. On the other hand the children were forced to engage in performing household works by their parents. When they went to school they had to face different bad behaviors from their friends from other caste. Teachers also did not give special attention to them as they treat all the students equally.

### **Learning Environment at Home and School**

Environment is the totality of the educational atmosphere at home and school. Home is regarded as the first school to all individuals. They learn how to behave, how to respect elders, how to cooperate to each other. Home environment plays a vital role in learning. Home environment reflects the

occupation, economic condition and learning opportunities of the students at home. School is the second home of any child. The teachers, students and parents are the components of the school. School environment reflects belief and tradition of the school community delineating the relation among parents, students and teachers. Scholarships to the students, extra class provided, dominance of language, cultural dominance are the major aspects of school environment.

Tamangs used informal language in his/her family, low word i.e. not standard vocabulary but in school informal language was not suitable, the standard vocabularies were used. In every household there was micro culture which was discontinued in the school culture. There was gap between silence culture and forwarded culture. Home environment was affected by everyday life of all individuals.

*"We don't have basic things in our house, how long can we go on this way. Nobody is in the family to earn money. We are in difficult situation to survive. We have difficulty in hand to mouth existence. How can we send the children to the school?(Parents view)*

The above view, it indicates that the economic status of family influenced to the achievement of the students. The high economic status could get better chances to buy books, copies and to take tuition and Coaching classes.

*"Our parents forced us in farming and household works. They said farming and labor is our main occupation. Parents said to us that we should*

*engage in house hold works like farming, labor etc. and to earn money rather than school.*" (Students view)

The above views indicate that children of Tamang had no sufficient time at home for mathematics learning. They had to engage on their main occupation, i.e., farming, labor. The learning opportunities at home for Tamang students were not sufficient. Mathematics needed more practice to achieve good marks. Tamang students had not such facilities.

*"My parents are illiterate. My father rarely comes at home. He always drinks. He works as a physical labor in Kathmandu. Mother spends all time making domestic use materials. Nobody is literate than me at home. So I have to handle all domestic problems there is no separate room to read peacefully at home. So, I can't take effort about my education."* (Students view)

The above view showed that Tamangs were illiterate. They could not teach their children at home. Due to lack of education, Tamangs were engaged on different works. The involvement of their parents in their children's learning was negligible. But the role of parents in involvement and encouragement helped the child to excel. Parents are first and ongoing educators of their own children as such should receive information and support to help their children's learning at home and in the community.

Concerning on the learning opportunities for the children at home, all of the children's home environment were not conducive for mathematics in mathematics learning. Although they were poor in mathematics, they were not provided with extra classes activities and although they were

economically poor, they were not again provided with scholarship at school. This was very intolerable condition for Tamang students were facing at school. Their learning was also hampered by the language dominance. The difference between their home language and school language also hinders in their proper learning mathematics. So they were poor in mathematics. Therefore the home environment of Tamang students was not in favor of the mathematics learning and school environment was not conducive for the mathematics learning. The low socio- economic status, unmatched culture at home and school, negligible parent's involvement and not sufficient learning opportunity at home were the main factors that obstruct/ hinder in creating proper learning environment at home and school.

### **Language**

Language is the greatest means of human civilization that sets them apart from the other living beings. It is such a means by which we perform communication, thinking, group solidarity, nation buildings, control and creation and absence of which no artistic academic and social activities can be thought. The language is major component for learning. It was observed that Tamang children tried to speak Nepali language with teacher and other students. But there was misunderstanding between language communications.

*"Tamangs have their own mother language. They do not speak Nepali language at home but in school Nepali is used. The language at home and school does not match. So they felt difficulty to learn mathematics."*

(Head Teacher)

"Our parents at home, frequently speak Tamang language but they do not use Nepali. So we must speak Tamang language at home. We have no opportunity to learn Nepali language at home but in school teacher always teaches in Nepali language. If the teacher taught us in Tamang language, it would be easier for us to understand the things." (Students View)

Supporting to the parents and student view the mathematics teachers was the major factors for creating the learning difficulties for Tamang students.

*"Tamang children have language problem. They cannot speak Nepali correctly. They speak mixed language which is difficult for us to understand. I always feel their irrelative language in the classroom. The Tamang children feel difficulty in understanding Nepali language in comparison to other students."*(Mathematics Teacher)

From the above view it showed that the Tamang students had poor Nepali language. They spoke their own mother tongue at home. The language of Tamang was not matched with the school language. In home they use Tamang language but in school they were forced to speak in Nepali, it was difficult to them to speak second language that's why they lagged behind in learning mathematics.

One episode of mathematics is given here. It was observed when researcher went in class with mathematics teacher.

*"The teacher went to the class, then after the researcher also entered in the class. The entire student stood up and said good morning sir. The teachers*



*said good morning and sit down. It was noticed that the school environment has taught them about the respect for the teacher. There were 40 students in the class among them, 11 were Tamang students. Teacher took the attendance of the students. All five students were present in the class. Teacher opened the book and wrote the topic simplification. He wrote a problem on the blackboard and solved it. All the students were busy to write the solution from the blackboard. The teacher did not review the previous lesson and did not check the homework. After some time he asked with the students whether they got the point or not. Some said "Yes Sir." But one of the researchers respondents asked with teacher showing his copy "Phelybhanidinumaile to bujhena." The teacher did not take care of him. Then the student started to ask the question to his friend in his language. They discussed for a while but the teacher did not take care."*

From the above views and classroom activities, it was concluded that there was discontinuity in language. Ogbu, (2000) furthermore argued that the discontinuity occurs in the area of language. This discontinuity carries the difficulty in mathematics learning. Finally, it can be concluded that language is one of the factors that arises the difficulty in learning mathematics for the Tamang students.

### **Teacher - Student Interaction**

Interaction is the social activity and may be within persons and between persons. Within persons interaction refers to the mental activities with his/ her mind and soul. It depends upon the personal intellectual capacity. Inter-

individual interaction refers to the sharing co-operation and adjustment between two or more persons. According to Ogbu (2000, 2001) learning takes place through environment, culture between home and school. The interaction between people may be symbolic single or code language. Interaction brings the maturity in learning.

*"All of the school teachers at the school are from Brahmin & Chhetri. They do not response us. If mathematics teacher would from Tamang community we could easily interact with him."-(Student)*

*"Tamang students are poor in language pattern. They always speak in Tamang language. They always used to sit together in group. They have poor interaction with other students also. I cannot understand their language. They use mixed language in classroom. Sometimes I ask questions but they cannot response. So I do not like to ask questions to them."(Mathematics Teacher)*

The above views of student and teacher indicate that there was language discontinuity in the mathematics classroom. Due to the mixed language used by students in the classroom, teacher did not understand the mathematics problem raised by students efficiently. There were difficulties to interact with mathematics teacher and other students of mathematics classroom for Tamang students which were due to language. The above views also indicate that the mathematics teacher had been neglecting the questions raised by Tamang students in mathematics classroom. Hence there was not proper interaction between Tamang students and other students as well as teacher in the actual classroom practices.

**One observed class episode is given below:**

*"The teacher was just entered in the class with daily using teaching materials. Researcher also entered in class with mathematics teacher. He had started to teach. He wrote the topic construction of angle. He did not review the previous lesson. On that day one of the researchers respondents raised one question but the children did not ask the question to the teacher directly rather he asked to his friend sitting. near to him. Both the children discussed the problem in their language (Tamang language). The teachers' attention bends toward the students who were talking. The teacher was angry and asked the students not to disturb. The students said that they were discussing about the subject matter which they did not understand. Then the teacher ordered them to speak in Nepali language and to ask the question directly to him."*

**Interpersonal Relation**

When the researcher observed the activities of the Tamang students at school, in classroom, in playground I found that the Tamang children often remain silent, hesitated to take part in every activities. The children generally afraid of asking question to the teachers. They felt problem to ask question in the class due to his language that the teacher do not understand and become angry. It seemed that the lack of interpersonal relation and communicative skill with other caste people was not properly developed to Tamang children. They couldn't interact well with his friends. The main influencing factor for the lack of interpersonal skill was the nature of relationship between the disadvantage culture.

As the researcher has observed the five key children, the researcher found that there was not good communication between Tamang and other children. Although they ate together, played together, but their community was different. The key children felt shame to ask anything with teachers and they didn't speak more with other children. Their interpersonal relation with other children was not developed nicely. Other caste children raised more questions but Tamang children lacked the interpersonal relation with other. Due to the behavior of other children towards them, they felt quite serious. The friendly language used by the Tamang children forced the teachers to feel irrespective behavior of them.

Due to the language felt problem, either the children hesitated to take part in interaction or they felt to their own mother tongue and culture but it was not their serious fault by intention not to respect the teacher. They learned restricted language in their family/community transmitting by the society. The researcher found that their language created cultural misunderstanding with teacher. The friendly language which they used in their home and with their friends and elder people is used in class. It shows that the culture of home was also influencing factor for the learning mathematics of Tamang children. So interpersonal relations also influenced to learn mathematics and they feel difficulty in learning mathematics.

### **Impact of Home Environment in Learning Mathematics**

Most of the people of parental generation were uneducated. They were only skilled to traditional pattern such as weaving doko, dalo, nanglo,



This counting system was generally used to count their money (selling, buying, earning etc.). But there was no written script for the numbers. To weight the things, they used the units pau (200 gm), bisauli (6 pau), dharni(12 pau). Tukuni was the special name for one pau(200gm) used by Tamang.

But in school, mathematics was learned by logic using formula etc. there was a big discontinuity between home environment and school environment of Tamang children. He learnt about different units for measuring and weighing goods in school, which were not applicable in their community/ home so that learning about school math had no immediate importance for Tamang students/ children. Lack of concept of modern measurement scale: in gaining, weighing goods, they didn't have concept of modern kilogram system. They measure the weight of certain things in iron utensils like mann, pathi, moori, dharni, bisauli. The frequent use of Tamang numeration system to count things, their own method of addition, subtraction especially of their earnings, expenditures etc. in their home/ community largely interfere the school learning. They had to rely on traditional units which was used everywhere in their society. So he felt difficulty in learning mathematics. Simple problem like addition, subtraction, multiplication were not difficult to learn . Since the learning strategies of children in home was discontinued at school. Here according to the theory of cultural discontinuity, Ogbu argued that due to the cultural discontinuity between home and school children felt difficulty in learning. In my opinion that was not only the cultural discontinuity but also discontinuity in learning strategy of children at home and school. Home and school environment affect the learning of children.

**Chapter V**  
**SUMMARY, FINDINGS, CONCLUSION AND**  
**RECOMMENDATION**

This chapter is basically concentrated in deriving some findings from the discussion of chapter IV. Besides findings and conclusions, it has some educational implications, which are also discussed on the basis of overall study of Tamang school children.

**Summary of the Study**

Tamang people are being discriminated, humiliated and disadvantaged socially, economically, culturally and politically in the society by the other caste people and the state policy. So the researcher intended to study the difficulties in learning mathematics of Tamang children as topic. The main objectives of the study were:

- To find the causes of difficulties in learning mathematics of Tamang students at Primary level.
- To identify difficulties faced by Tamang Students to learn mathematics.

The research was conducted in Jalpa Devi Higher Secondary School Bhotechaur 8, Sindhupalchok. The design of this research was explanatory case study in which meanings were derived from the total study; logic and reasoning of why and how it was like that, linking with theories. The case study of those sampled Tamang children were carried out through uncontrolled observation and interview where needed.

For the case study, three boys and two girls were selected; who were studying in class five was taken as the sample. To support the findings of the study, John Ogbu's theory of cultural discontinuity was used.

Most of the children have difficulty in learning mathematics in same area and difficulty is due t their cultural discontinuity and also frequently absence. In one hand they are forced to engage in household works by the demand of society. It is their weak economic also, which force them to be engaged in different works. On the other hand, they are forced to do work at home by their parents. Teacher never gives proper attention separately to the Tamang students, influencing factors which have indelicate dare very important because Tamang children learn at home and school along with these influencing factors. Home is the main area of learning for children. So, home environment, school environment, parent's behavior etc play an important role. Similarly, behavior of society and teacher also play the vital role for Tamang children in learning mathematics.

### **Findings**

The researcher found that following are the causes of difficulties in learning mathematics:

- Tamangs financial condition is not strong enough to send their children at school and afford them in their further education. Most of the parents of Tamang students are illiterate and their children are. usually used as means of earning money for their simple livelihood. Since the size of



Tamang Family is large, the children of Tamang parents do not have conducive environment for mathematics learning.

- There is lack of local teacher at school from the Tamang community. There is no sufficient time for learning at home for Tamang students.
- There is cultural difference and discontinuity at home and school as they get practical knowledge in their home and theoretical knowledge at school.
- Tamang students have used their mother tongue. Nepali language as the second language. There is language discontinuity at home and school.
- There is lack of interpersonal relation between Tamang students, mathematics teacher and other students at class.
- There is no proper interaction between Tamang students and mathematics teachers.
- The home and school environment is not suitable for the mathematics learning of Tamang children. They always receive dominating behavior by other students and teacher at school.

## **Conclusion**

From the study the researcher draws the following conclusions:

- The language plays the vital role in mathematics learning. Due to the lack of proper understanding of language, that creates the difficulty in mathematics learning.

- The culture also plays vital role in mathematics learning. Due to unmatched culture at home and school, that arise the difficulties in mathematics learning..
- Their economic status is not strong enough to carry on their further education and as a result they are compelled to break their education.

As they do not match to other students they are given less emphasis for learning and participation.

- Their experiences and everyday lives are seemed to be ignored by school practices, though they have inward enthusiasm in learning mathematics.
- The learning environment plays vital role in better performance in mathematics learning. Due to the lack of proper environment at home and school, that creates the difficulties in mathematics learning.
- The inadequate use of instructional material in the class and no proper use of child psychology by the mathematics teacher is one of the causes of learning difficulty in mathematics.

### **Recommendations**

Teacher can relate the everyday learning with teaching learning activities by reflecting their previous experiences in the home/community where he or she has performed different everyday activities for instance, telling how she/ he did shopping in local bazaar/place, where measurement tools were used. This may be an effort in local level, which can be done in school level. The teachers have to create situation that can be bridging between home and school practices.

According to the finding and conclusion provided by the study, the recommendations for further study can be presented as:

- A similar study can be done for Lower and secondary level and other subjects.
- School may be applied practical knowledge based activities which can promote their previous experiences.
- This study is done with limitation and in particular area. The broad and general study may be done for overall Tamang community.
- Teachers may be played a vital role in bridging the gap between the interpersonal relation among them and the Tamang children. A study can be done on the causes of school dropout problem of Tamang students.

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## APPENDIX A

### Interview Format for the Parents

Name:-.....

Address:-.....Occupation/profession: - .....

Literate/illiterate:-.....

The interview of the parents was taken on the basis of following topic

- Parents behavior towards child at home
- Main interesting area of his child at home
- Environment at home for learning
- Reading opportunity at home
- Physical facilities for learning
- Economic condition
- Expectation from school

## APPENDIX B

### Interview Format for the Head Teacher

Date of interview:-.....

Name: - ..... Address: - .....

Religion: - ..... Qualification: - .....

The interview with the Head teacher was done in the basis of following topic

- Learning environment in the school
- Student and teacher relation
- Student opportunity for learning with teacher
- Guidance for mathematics teacher
- Difficulty thing for Tamang students at school
- Causes for difficulties

## APPENDIX- C

### Interview Format for Teacher-2015

Date of interview:-.....

Name and caste:-..... Sex:-..... Age:-.....

Religion:-..... Qualification:-

.....

Experience in teaching:-..... Others: - trained/untrained

Address:-..... Ward No:-.....

V.D.C/municipality.....

The interview with mathematics teacher was taken in the basis of following topics.

- Teaching strategies of the Tamang students
- Problem of teaching Tamang students
- Encouragement of the students learning
- Participation in the classroom
- Participation on individual/group
- Relation between teacher and Tamang students
- Impact of cultural differences in the learning mathematics
- Factors that influence the learning of mathematics for Tamang children

## APPENDIX -D

### Observation form for Children's Participation in Learning in the class

Children's name: - .....

Students attendance	Teachers activity	Topic	Children's participation individual	Children's participation In group	Homework	Class work	Observer's comment
Falgun							
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

The observation is done in the basis of following main topics.

- Friends behavior towards the children
- Main area of interest of learning
- Children's involvement in household work
- Daily life practices
- Teachers behavior toward the children
- Main interest thing in learning mathematics
- Difficult area in learning mathematics



## **APPENDIX-E**

### **Interview Format for the Key Informants-2015**

Name of the student:-..... class:-.....

Roll No:-..... Age:-..... Girl/Boys:-.....

The interview with the Tamang students was taken in the basis of following main topics.

- Family background
- Personal history
- Working time in his/her home
- Reading opportunity in home
- Learning strategies at home
- Learning strategies at school
- View about mathematics
- Difficulties in learning mathematics
- Relation between Tamang students & other students
- Relation between Tamang students and their mathematics teacher
- Appropriateness of teaching learning strategies
- View about school environment

## APPENDIX- F

### Individual Student Record -2015

Shree Jalpa Devi Higher Secondary School Bhotechaur 8, Jaisigaun,  
Sindhupalchock.

Name and caste:-..... Class:- .....

Roll No:-..... Girl/Boy.....

Age.....

Nationality ..... Religion.....

Address .....

Distance to school from home

(approximate).....

On foot..... Bus ..... Other means.....

Name of your father .....

Occupation .....

Name of your mother .....

Occupation .....

Number of family members .....