

## Chapter-I

### INTRODUCTION

#### Background of the Study

Mathematics directly deals with human life. It is believed that the development of mathematics and development of human civilization from the Stone Age to the modern world, where mathematics has played a vital role. Mathematics, in its initial stage, it was created to fulfill human needs. It was introduced later in formal education system. It has been developed simultaneously with the development of society. Mathematics is not only related with taught and practicing with own ideas and belief. Mathematics and life are related to each other. The word "Mathematics" is very difficult to define. "Mathematics" has come from the word "Mathematica" which means "Inclined to learn", Benjamin Pierce, one of the best of the American-trained mathematicians said that "Mathematics is the science that draws necessary conclusion". Thus mathematics like a language, is a basic tool of communication (Acharya, 2016).

In every country, mathematics plays a more important role to the invention of science and technology along with socio-political situation of the society. Therefore, mathematics education is related to teach and apply the mathematical knowledge in contemporary society. In our contemporary society, mathematics education helps to reply the genuine questions such as: what is the place of mathematics to learn mathematical knowledge? How mathematics is related with our daily life? What type of relevance exists between advanced mathematics and school mathematics teaching? What type of mathematics should be needed for our students? How do the students gain mathematical knowledge and ability? How is the socio-economic

condition effect in learning mathematics? What is the relation of mathematics achievement of low economic condition and high economic condition? The subject mathematics education which answers all of these questions arises above. It is already mentioned that mathematics education is necessary in every field and to every person. So, mathematics must be made popular to all and accessible. In order to make mathematics popular, different mathematical programs were developed such as family mathematics program, ethno-mathematics, and women-mathematics etc. Many mathematics organizations such as IMO (International Mathematics Olympiads), IMU (International Mathematics Union), ICMI (International Commission on Mathematics Instruction), etc. played a vital role to make mathematics popular. Among them ICMI put the most expected slogans "Mathematics for all". So, we can say that mathematics education is necessary to almost all students whether they are Harijan students.

Nepal is full of diversity in which different language, culture, customs, economic condition, castes, ethnic groups etc. All the people of Nepal are living in different regions like Terai, Hilly, Himalayan region. So, mathematics achievement is different because of the different ethnic groups and cultural background. In Terai region, there are many castes in which some of them called low caste and high caste and they speak different language, culture, and ethnic groups like Brahmin, Chhetri, Yadav, Tharu, Loniya, Kewat, Beldar, Baniya, Muslim, Harijan etc. There is not close relationship between Dalit, Brahmin, Chhetri etc. They have higher status than the people belonging to ethnic groups. Population distribution of the ethnic groups depends upon the different climate zones and different geographical settings. All of them Harijan group is low group people. Harijans are a Dalit people community of the Terai region of Nepal. They have been living in some districts of inner Terai region

stretching from Jhapa in the east to Kanchanpur in the west. They are not so rich in culture and they speak and dress as other people in their related community but still they have diversity depending upon the region they live in. Harijan is the nick of the Chamar. The name of the Chamar might have come from the occupation of the cast's people who are still famous for taking skin of dead domestic animal and selling them but now all the animal are sold before they die. According to National Population Census (2068 B.S.): The highest literacy rate of Brahmin and Chhetri is 76.03%. The Dalit literacy rate in Nepal is 52.48%, in which Hilly's Dalit literacy rate is 61.93% and the literacy rate of Terai region Dalit is only 34.50%. The total population of Harijan is 3,35,893 which is 1.268% of total population of Nepal. In which male and female populations are 148516 and 146258 respectively. The literacy rate male and female of Harijan are 46.17 % (68574) and 27.74 % (40569) respectively (Population Monograph of Nepal-2014).

Now in Harijan community many males plan to go in other country to money and some of them work in farms, some has learnt different skills and do their work in different fields. This Harijan people are weak in different ways, for their improvement different organizations like NGOs, INGOs, ABC Nepal are played important role in their education, in economic conditions etc.

### **Statement of the Problem**

Achievement in mathematics is affected by various factors like home and school environment, physical facilities, attitude towards mathematics, peer groups discussion, discussion with senior, interaction with teachers, teaching learning material and process, economic condition, community education etc. Thus for improving mentioned factors and then minimizing low achievement of Harijan students in mathematics or to get more achievement in mathematics in secondary

level, it is considered as a researcher research topic. The statements of the problem of this study as follow:

- 1 Why the Harijan students have low achievement in mathematics?
- 2 How the Harijan students can be promoted for their better achievement in mathematics?

### **Objectives of the Study**

The main objective of this study is to explore the causes that brings low achievement in mathematics of Harijan students of Rupandehi district at secondary level. The following objectives will be designed for this research study:

- 1 To explore the causes that brings low achievement in mathematics of Harijan students.
- 2 To identify the strategies managed by school and home to improve mathematics achievement.

### **Significance of the Study**

It deals with the rationale of the study. Mathematics is an essential part of school curriculum. It has been taught for all students as compulsory at school level. So every student needs fundamental knowledge of mathematics to solve his/her daily life problem. Generally, mathematics is considered as difficult subject most of the students afraid from mathematics and are failed in it in SEE level. Harijan is marginalized, disadvantage and deprived group from opportunities who have not good economic condition, low educational status in their society. There are number of reasons for failure in mathematics. Most of the researchers have compared mathematics students on the basis of ethnicity, Parent's education, occupation and income, and they have found its effect on mathematics achievement. These researchers have found that the

different causes of low achievement in mathematics. But no one has found that “what are the causes that bring low achievement in mathematics of Harijan students”. So this study will be helpful to determine the causative factor that determines low achievement of Harijan students. As well as, this study determines why the achievement level is low? Which is the significance of the study? Thus, the study will be significant for the reason that it will help to determine the reasons that determine the achievement in mathematics which can be used to improve the mathematics teaching learning situation and to reduce the failure rate in mathematics. This study will provide the appropriate information about the difficulties of Harijan students in learning mathematics. This study also opens the door for further research in the field of learning problem of Harijan students. So the research was more relevant and contextual.

The study would have some significance which are as follows:

- ) This study would find the reasons of low achievement of Harijan students in mathematics which would be valuable things for teacher, researcher, curriculum designer and other stake-holder related to education.
- ) The study would be important to identify how the learning environment affects in the achievement of Harijan students in educational sector.
- ) This study would be useful for government, NGO, INGO and related committee to improve the educational status of Harijan students and these communities have deficiency in education.

### **Delimitation of the Study**

Any study cannot overcome all the fields. Among all public schools of Rupandehi only one sample school will be taken accordance with researcher

convenience and the study result will be based only on mathematics classroom of selected grade of public school. So, the result of this study can be no more generalized. The following would be the delimitations of the study:

- ) This study was limited to only one school of Rupandehi district.
- ) This study was done in Piparahawa Secondary School Piparahawa Rupandehi.
- ) This study was based on SEE level of Harijan students of public school.
- ) Five low achieved Harijan students were taken for the study.
- ) The study was based on qualitative analysis so advanced statistical tools will not be applied.

**Definition of Related Terms Achievement:** Achievement in this study is defined on the basis of mathematics score obtained by the students in the test taken by school.

**Causes:** In this study causes refers to the main reasons for poor achievement.

**Low:** In this study low refers to very poor achievement in mathematics.

**Harijan:** A Dalit caste who is laborious, discriminated, poor in economical condition, politically excluded, educationally deprived group by society. It is known as untouchable caste groups in some society of Nepal, but it is not justified legally as like Harijan.

**Lack of Practice:** Lack of practice means lack of student's habit of exercising mathematics at home.

**Home Environment:** Home environment refers to the aspects of student's domestic lives that contribute to his/her educational environment.

**Parent Occupation:** Parent Occupation means a regular activity performed by the student's parents for generating income.

**Secondary Level:** In this study class 9 to 12 in the system of Nepal is consider as secondary level.

## **Chapter-II**

### **REVIEW OF RELATED LITERATURE**

The literature review in this research study accomplished several purposes. It shared with the readers, the results of other studies that were closely related to the topic of this study. Review of literature is an essential part of all studies, it is a way to discover what other research in the area of the one's problem has uncovered. The review of the literature helped the researcher to develop an understanding and insight into previous research works that related to the present study. It also provides a way for investigating particular problems that research wanted to answer. The present chapter attempts to review the research studies and literature in the domain of causes of low achievement with special references. Also, the purpose and question addressed in his/her study. It helped the researcher to know the work carried out in the area of his/her research project. The main purpose of review of related literature was to develop some expertise in one's area to see what new contribution was made and receive some idea for developing a research design. The review of related literature helps to make the concept clear for the study and also directed to analyze and interpret the data.

#### **Review of Empirical Literature**

Several types of related literature were reviewed in this study which helped to make the clear concepts for the study and also directed to analyze and interpret the data. With this assumption some related literature were reviewed as follows:

Bastola (2007), did a research entitled "Factor affecting on achievement of Dalit student in mathematics". This research has found that caste system the everyday lives of people their way of talking and behavior to other people, their relation experience and perception towards other things and people. The lower caste have to dominated,



humiliated and oppressed due to the culture and poor language in every field such as home, community and school. Cast system not only determines the occupation and everyday lives of people but also affect the learning strategies and perception of students. People give of less emphasis on learning and ignore the school practice in daily life. So culture discontinuity was main cause of learning mathematics.

Pandey (2008), did a research on “Causes of low achievement in mathematics: A case study” with the objective to find out the causes of low achievement, to identify the strategies taken by school in improving mathematics and to find the ways of promoting mathematics achievement. The researcher selected 6 students including 3 boys and 3 girls from different family background and the performance of the examination in mathematics. He analyzed the interview schedules taken by head teacher, mathematics teacher, selected students as well as their parents and class observation note the basis of the theoretical framework of the affecting factors in mathematics achievement. His study concluded that there is discontinuity between home culture and school culture. The home culture is not supportive for mathematics learning.

Ghimire (1997), has done a research in the title “Factor affecting teaching and learning mathematics at secondary level” with the aims to explore the factors affecting of school mathematics in terms school environment, family background, motivational factors. The tools for the study were administered to sample of 90 students and the data was analyzed by using t-test. He concluded that environment of the school in rural and urban areas affect equally but the boys are more affected than the girls. Likewise environment affect more to the subject of rural areas and girls are affected more than boys. He was also finding out that motivation, student’s interest,

instructional methodology and materials also affect on the teaching and learning mathematics.

Adhikari (2006), conducted a research on the topic “Cultural Discontinuity and Difficulties in learning mathematics of Dalit students”. The aims of this study were to find the causes of difficulties in learning mathematics, influencing factors in mathematics learning, impact of home environment. The research was completed on four Dalit students. The main tools these studies were in depth interview, observation form, written documents. This study concluded that there is discontinuity between home culture and school culture. The home environment is not supportive for mathematics learning.

Yadav (2008), conducted a research on the topic “causes of low achievement in mathematics of Musahar students”. And his research found that the Musahar economic condition does not seem to be strong to send their children at school and afford them in their future education. Most of the Musahar parents were illiterate and they use their children as means of earning to support their living. Most of Musahar students speak Maithili language which causes difficulties in mathematics learning to deliver their own opinion to their teacher and understand Nepali language.

Tharu, (2004), did a research on topic “Impact of Socio-Economic status on mathematics achievement of the students”. Which determine the correlation between socioeconomic status and socioeconomic status and gender. He selected the sample of 140 students of Bardia district and mean, standard deviation, correlation coefficient and multiple regressions were used and applied to conclude that low achievement appears to be common phenomenon in the Nepal’s educational system. Low achievement in mathematics is major challenge to mathematics education in

Nepal. The issue is not only a question of efficient education, but concerns the need to create an equitable education system.

Chaudhary (2014), did a research on topic “Causes of low achievement of Musahar students in mathematics”. The prime theme of the study is to find the causes low achievement of Musahar students in mathematics and identify the strategies adopted by school administration to improve mathematics achievement in mathematics. This study was done in Shree higher secondary, SimraBhawanipur VDC-1, Rautahat. The study was conducted by taking of sample 2 boys and 3 girls with the tools observation, in depth interview, and school documents. The researcher found that, there is cultural discontinuity at school and home. There is discontinuity in language, lack of interpersonal relation between teacher and Musahar students, low economic status and house workload.

Dahal (2011), had studied on the topic “Causes of low achievement in mathematics of Magar students: A Case Study”. With the objectives to explore the causes that bring low achievement in mathematics of Magar students and mathematics learning environment of Magar students at home and school. This was case study research having qualitative and descriptive nature with 2 boys and 2 girls of primary level of Kaski district was selected purposively where Magar students studies. The tools for data collection were interview, observation, and written documents. He concluded that parent’s education and occupations, learning opportunities at home, culture and costems, teaching methods, relation between teacher and students.

Bhattarai (2016), did a study on the topic “Causes of low achievement of Tharu Students in mathematics”. The objectives of this study was to find the personal factors that causes the low achievement of Tharu students in mathematics and to analyze the role of home and school related factors for low achievements. To fulfill the objectives

this study, four Tharu students were selected purposive random sampling procedure. The tools of the study were in depth interview, observation, and school document and design of the study was descriptive in nature and based on qualitative approach. From this study, the researcher found that most of the Tharu parents were illiterate, language one the obstacle for Tharu students.

Since from above review, there have been many researches on topic achievement study of different ethnic group, factors affecting learning mathematics and causes that affect mathematics achievement. From which the researcher has found that there are many causes such as culture, physical facilities, home environment, teaching learning process, motivation, teacher behavior and interaction are the influencing factors in learning mathematics.

### **Theoretical Perspectives**

In the world, there are so many theories that are developed which can be used to understand the learning process. The theoretical discussion is needed for the interactive finding of the study. Many theories about learning and development of children such as cognitive, behaviorist, humanist, social constructivism of which constructivism is one of the theories to analyze and interpret the data of mathematics or resolve the problem. To analyze and find the suitable solutions in the area of low achievement in mathematics; constructivism becomes one the possible theory to solve the problem on the topic of “Causes of low achievement of Harijan students at secondary level of Rupandehi district”(A Case Study). Every students learn from society from social contact with home family and universe. According to them, knowledge can be constructed from society. This kind of thoughts can be given by constructivism.

## **Constructivism**

Constructivism is related to educational theory to deal with the problems of mathematics. It helps to find out the problem of low achievement in mathematics. It is the theory based on observation and scientific study to deal the problems of learning. It asserts on forming the understanding and knowledge of the world through experiencing things. When we encounter something in our mind perceives the things and reconcile with pre exist idea. It means our mind becomes active creator to reach and act with present surrounding. In the similar way constructivist idea of learning can point towards number of different teaching practice. It encourage the students to involve themselves activity and used techniques of learner centered, group work discussion, learning by doing, use outside tools to be more practical and gain high achievement in mathematics rather than classroom it focus on real life learning environment, social interaction and use of complex idea share with other outside classroom easily. Constructivism transforms the students from passive receipting of information to active participation in teaching process (Acharya-2017). Constructivism based on three axioms that are as follows:

- ) Learners get the knowledge from their active participation.
- ) Learners gain the knowledge while reflecting on their own action.
- ) Learners gain the knowledge when they try to convey their solutions to others.

From above axioms Bhattarai (2016) took three terms action, reflection and scaffolding to describe three broad aspects of constructivism, psychological aspect, philosophical aspect and sociological aspect. Piaget stresses on the key word “action” though which he advocates that knowledge is gained. He said that essential way of knowledge is not directly though our sense but primarily thought our action. Philosophical aspect of constructivism is also called radical constructivism

led by Vygotsky who states that knowledge is socially constructed. Vygotsky has developed “socio-culture theory” and believed that children are active seekers of knowledge. Knowledge is being constructed in social situation of negotiations, rather than being the reflection of the objective reality which is term as social constructivism (Acharya-2016).

So, in brief can make their own meaning from their own belief, construct new ideas from what they observe, listen and perceive. They do not always use the taught methods but use their own strategies to solve their problem on their own.

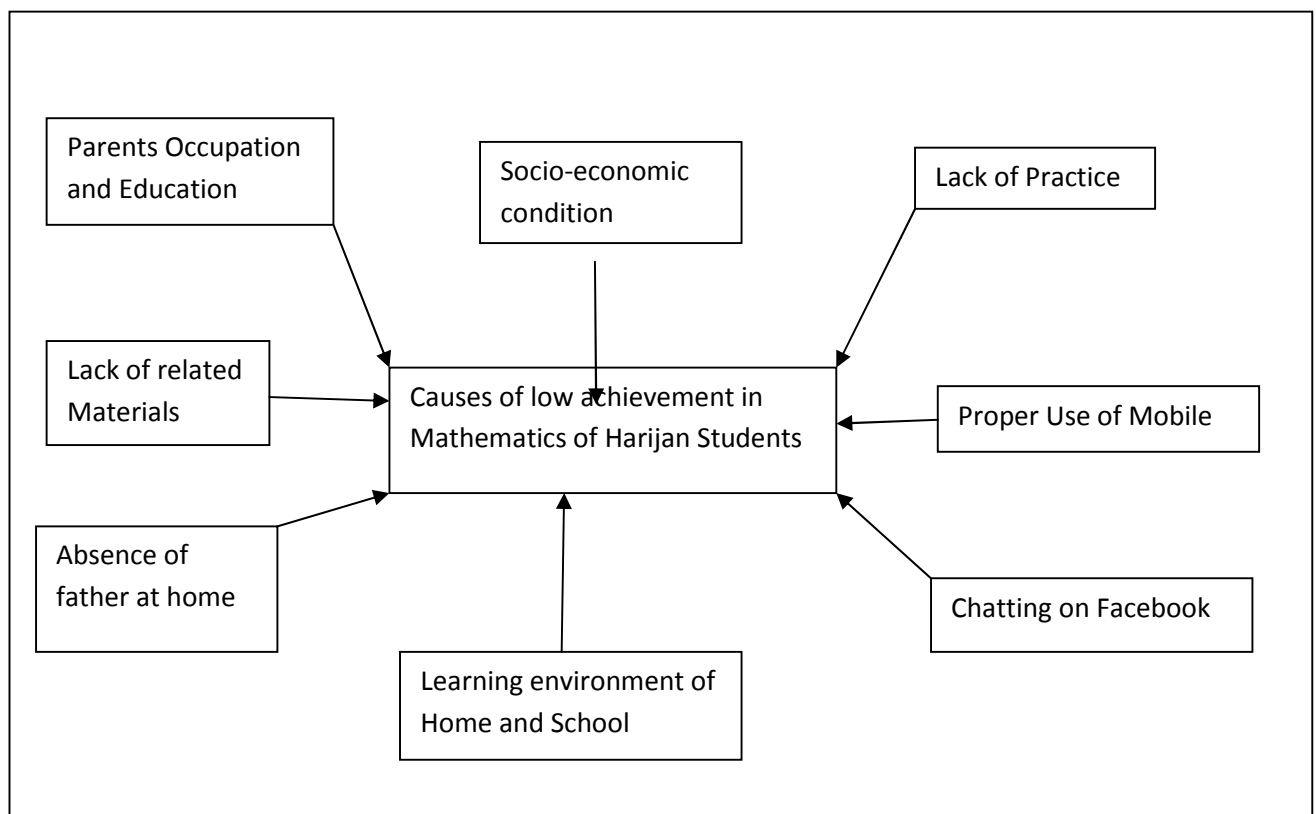
### **Ogbu’s Cultural Discontinuity Theory**

Ogbu(1982), relates the cultural-ecological perspective further when he addresses more thing related specially the connections between home and school. He notes that all children in society experience an “initial discontinuity between home and school in language use, contextual learning, and style of learning”(p. 293). Ogbu(1993) defines “cultural frame of reference” as “the correct or ideal way of behaving within a culture-attitudes, beliefs, preferences, and practices considered appropriate for members of the culture”(p.490). Unlike voluntary minorities, their cultural frames of reference do not allow them to cross-culture or language boundaries (Ogbu, 1993). Ogbu, (2001) furthermore argues that discontinuity is also occurred in the area of language, thought and measurement. It happens mainly due to the difference between teaching and learning strategies in home/community i.e. informal education and the style used in school i.e. formal education. Similarly, since children learn in school environment without to their natural context in their experience, learning may have no any significance to their everyday life.

### Conceptual Understanding of the Study

This was case study related to the causes of low achievement in mathematics of Harijan students at secondary level of Rupandehi district. There are so many researches of different ethnic group such as Magar, Musahar, Tharu etc. It has already described related literature and theoretical perspective; the following theoretical model was constructed for low achievement of Harijan students on mathematics learning which was framework for the case study. The case study mainly was based upon the cultural discontinuity theory.

**Figure: Framework for causes of low achievement in mathematics of Harijan students**



This research will try to test the above model by interview and observation to find the

This research was tried to test the above model by interview and observation to find the causes of low achievement in mathematics at secondary level of Piparahawa Secondary School Piparahawa, Rupandehi. Hence this was the major theoretical base for this study. The above model was developed by the researcher from the help of related literature, previous thesis and supervisor. This study was mainly based on the above researches and already explained theory of social constructivist for mathematics learning which focus on socially constructed knowledge. An achievement is always affected by different variables such as school related, home related as well as personal factors. This case study explains and interprets how the proposed elements work for mathematics achievements.

In the above researches it was found that there was no any research or study has been done related to the Harijan caste. In the review of related topics, in other cast, the influences factors of their education and learning mathematics are mostly attitude towards mathematics, school environment, home environment, peer group discussion, teaching learning process, class work, library and lack of related instructional materials, family background, discussion with senior, absence of father at home, homework and interaction with teacher and proper use of mobile. In this way what are the actual leading factors that affecting the learning mathematics and achievement in mathematics of Harijan students were included in this research.

### **Chapter-III**

#### **METHODS AND PROCEDURES**



The Methodology describes the basic research plan. This is really the heart of the study here the activities that is used to complete the proposed study is described in detail. Methodology is the science, which determines how the research becomes complete and systematic. This chapter describes the design of the study, rationale of selection of study area, site selection, selection of sample school, selection of case respondent, instrument for data collection, data collection procedure and data analysis and interpretation.

### **Research Design**

Research design is the way and path of the research that guides the researcher to reach the goals of the research. Its main importance is to help researcher to collect the data, interpret and analyze it. The study is designed as the case study, related to the causes of low achievement in mathematics of Harijan students, which is qualitative and descriptive in nature. A comprehensive study of a social unit- be that unit be person, a group, a social intuition, a district or a community is called a case study (Khanal-2074). Case study is a research methodology, which has no one definition of case study research. However, very simply, a case study can be defined as an intensive study about a person, a group of people or a unit, which is aimed to generalize over several units. A case study has also been described as an intensive, systematic investigation of a single individual, group, community or some other unit in which the researcher examines in-depth data relating to the several variables, there may be a variety of ways of writing a case study. The case study approach is particularly useful to employ when there is a need to obtain an in-depth appreciation of an issue, event or phenomenon of interest, in its natural real life context. Our aim in writing this piece is to provide insights into when to consider employing this approach and an overview of key methodological considerations in relation to the design, planning, analysis,

interpretation and reporting of case studies. A case study is a research approach that is used to generate an in-depth, multi-faceted understanding of a complex issue in its real life context.

### **Selection of Respondents**

The researcher selected Harijan students in Piparahawa Secondary School Piparahawa, Rupandehi because of the poor educational status backwardness in every aspect of their life. In the community where this school is located, many children are not attending any educational institution yet. If attended a few number of students are successes. Therefore this would focus on causes of low achievement in mathematics of Harijan students. Most of the Harijan population reside in this area and selection area was accessible. So it was the appropriate study site of this research study.

### **Site Selection**

The site selection is also a very important for studying in order to find the appropriate information related to Harijan community because it needs Harijan students who are studying in the school, obtaining easy access, establishing immediate rapport and getting information and gathering data directly related to the researcher's research interest was main criteria for selection settings.

### **Selection of Case Respondents**

The respondent of the case study was the low achievement students, their parents, mathematics teacher of related grade X, head teacher and people between school and home. The respondent selected purposively to find out the case of low achievement in mathematics of Harijan students. From the selected school, only five low achiever Harijan students on the basis of mathematics score of previous exam. The parents of case students, head teacher, mathematics teacher and the person who are

between home and school was selected as the respondents of the case study. For this study purpose, the researcher has to prepare the conceptual understanding of the study in literature review. To get additional information about the case students and his/her family backgrounds, researcher has prepared the individual students, records of low achiever in mathematics of grade X Harijan students.

### **Tools for Data Collection**

The data collection is the most important part of the study. On the basis of data collection tools, researcher collected the data and analyze every aspect of causes. The consequences of the study depended on the nature of data and data depends on tools. To collect primary and secondary data, the following tools were used.

### **In-depth Interview**

The interviewer prepared interview guidelines on the basis of suggestions from supervisor, research documents of other casts and books related to Harijan and according to situation of nature. The researcher met the Harijan people and undertook interview under the guidelines in unstructured form because of not having pre-defined data. With the help of developed unstructured interview researcher was taken interview with key students with the help of audio recording materials like tape recording, note making and also with the help of other primary sources to mathematics teacher, head teacher, parents and people between home and school to collect the primary data from the case respondents. To fulfill the objectives of the research, the researcher developed the themes.

### **Observation**

The observation tool were applied to observe mathematics students' activities in classroom during teaching learning period, which was focus as per the theoretical framework and objective of this study.

### **School Documents**

School record of students, teacher profiles, mark ledger, attendance, past results and other related documents of the school had been used.

### **Data Collection Procedure**

At time of data collection the researcher visited the selected school and established a relationship with teachers and students. Then the researcher conducted interview to the selected respondents. Teachers and head teacher was also interviewed for extensive information about the sample students. The selected students was again interviewed after getting extensive data about the students from their parents, mathematics teacher, head teacher and people between home and school.

To collect the qualitative data, class observation was also carried out regularly for two month in mathematics classroom to observe the activities. Researcher would have watched, listened and recorded the essential data from the information in a natural setting through using non-participant observation. On the basis of observation form the researcher would have observed mathematics class in grade X of the school and behavior of mainly Harijan students in classroom. On the observation form classroom behavior, difficulties they feel in mathematics learning and other essential information was carefully collected and noted every day.

### **Quality Standard**

Lincoln and Guba (1985) propose four criteria for 'naturalistic' research. As their work to 'formalize rigor' has been particularly influential in the social science generally, it is worth focusing on their categories in depth. Interestingly, they link their criteria with four used conventional quantitative inquiry; those of internal validity, external validity, reliability and objectivity.

**Credibility.** Credibility is achieved by addressing such aspects as immersion in the environment, accurate interpretation of the data, triangulation and member checking (Lincoln and Guba, 1985 as cited in Smyth, 2006). To maintain credibility of my research, I tried to spend more time with participants for the research. The data were collected from in-depth interview, class observations, documents of school and got several information related with research problem. After getting information, I again met participants to make results realistic in the perspective of participants about their culture when I got that participants were eager to hear their culture activities and experience in the form of research.

**Transferability.** Transferability refers that findings of the research are applicable and similar to other educational site. In the field of research, the data generating process can be useful and similar to other researcher in the similar area. To maintain transferability of the research, I captured the daily life activities, culture, profession, and social activities of the Harijan community by observation, interview. Also this study encouraged to linking reader's culture and geometrical knowledge of socially available and made education process effective and object oriented through ethno mathematics.

**Conformability.** For conformability, it is also important to ensure that the findings of the investigation are the result of the experiences and ideas of the participants and not the preference and characteristics of the researcher (Shenton, 2004 as cited in

Vanderleur, 2010, p.127).So to the quality of the results produced by an inquiry in terms of how well they are supported by the members who are involved in the study and by the events that are independent of the inquirer.So all collected information was based on participant's views, ideas, experience and interpretation.Thus, this helps to make the research findings are true and exact on participant's practice.

**Dependability.**To maintain dependability, I had observed and taken interview with the participants and included in this study.If repeated the study, the result of research would be same from the involvement in the same place, same participants and same methodology, when social environment is changing due to modernism.

### **Ethical Consideration**

This study was conducted only for the academic purpose. While collecting the data ethical consideration was taken to ensure for the data privacy. With regarding this study, I had clearly informed my purpose to my respondents. I did not use the data for the other purpose except my research work. I will not bring out anything that would effect to the prestige of my respondents.

### **Data Analysis and Interpretation**

The collected information from class observation, taken interviews and school's records was first categorized and then different themes was made, these theme was considered as a code and versions of the respondents was collected together and was explained in their perspectives.Finally the summary and conclusion was drawn and required recommendations was stated.

## **Chapter-IV**

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

This chapter deals with the analysis and interpretation of the collected information derived from the case study. This was a qualitative study. The main focus of this study was to explore the causes of low achievements in mathematics of Harijan students. The researcher minutely studied the school's documents such as teacher profiles, mark ledgers, attendance as well as the records of the students. Also the researcher had observed mathematics class, case student behavior, activities and interaction with mathematics teacher in this research. Each activities and behaviors of students and teacher were carefully observed and noted. The direct interview was taken to the focused students, their parents, mathematics teacher and head teacher. The responses of the respondents during face to face interview were carefully noted. The student's home environment and behavior were evaluated by the researcher with the help of interview schedule. The researcher had also noted the case student's pre-class documents, their regularity, from school document. The researcher had arranged the data given by the five Harijan students view and analyzed the data using the cultural discontinuity.

The descriptive method is also used in this research. The researcher has attempted to calculate the study by describing and analyzing the information acquired in the research process. The collective information was analysis and described in their perspective under the following headings:

- ) Introduction of the sample school
- ) Children life at home
- ) Learning environment at school
- ) Home and School culture
- ) Causes that influence factors in learning mathematics

### **Introduction about Case school**

The researcher had selected sample school “ShreePiparahawa Secondary school, Rohini-5 Rupandehi” which was established in 2014 B.S. The school has launched classes from 1 to 12. At present there are 19 teachers including Head teacher in this school. There are 748 students in this school including 25.67% Harijan students. The Brahmin, Chhetri, Tharu, Muslim, Paswan, Yadav, Harijan etc. are studying in this school.

### **Children life at home**

Culture is the most distinctive attribute of human race. Because of this quality, human being today is able to protect, transfer and improvise the cultural traits as per its necessity. Culture is not pre-constituted object but must be created through human intention and action. The human is the actor beside the creation, manipulation and interpretation of the culture, by virtue of human's cognition, today's civilization is possible inside the cultural practices directly stimulate the mechanism of society and simultaneously affect the cognition psychology of human being (Chaudhary, 2014). As a result, every activities of human race are shaped and determined by existing cultural pattern of his/her community. Therefore, the existence of human beings and cultural attributes analogous us to each other. Especially caste discrimination, socio-economic condition, value of education in society, parent's educations, absence of father at home, etc. are the major problem concerning this topic of this study. This study is analyze whether the existing cultural practice is supportive or not to learn mathematics of Harijan students.

In this study regarded, the brief introduction of the case respondent is presented below:



**Respondent A**

Rajkumar Harijan was seventeen years old boy studying in grade ten. He lives in Tarkulaha, Rohiniga. pa.-5, Rupandehi. The distance between his house and school is 2km (approximation). He goes to school by bicycle. He has seven members in his family. His economic condition is very poor. He did not want to go to school regularly because he has to earn money and do all the household works. His interested subject was mathematics and wanted to be Engineer.

His mother was uneducated. Economically, it was hard to maintain the family. His father died thirteen years ago. He used to work in farm daily to maintain food and his uncle helped in study by giving money.

While observing the mathematics class, the researcher saw him with homework but according to the mathematics teacher sometime he comes without homework and without uniform. He had hardly asked the question in mathematics class and also less participated in teaching and learning activities. From that we can assume that he was interested in rather than in academic activities.

*“He is a good student but his position has decreased then previous year. He have no good environment to study in the house and there is no guardian in home who helps him in his study. So, he get low position”.*

-Head teacher view

**Respondent B**

Sangad Harijan was seventeen years old boy studying in grade ten. He lived in Piparahawa, Rohiniga pa-5, Rupandehi. He was not so interested in studying in school as well as at home. He said his aims of life that he wanted to become a dancer in life. There were 4 family members in his family. His father was plumber and also used to do work in farm being farmer. His interested subject was computer. He has no work to do in home but he always leaves the class in half time and went to city to learn dance so did not get time to complete his home work in time.

According to his mother, they were uneducated and interested to provide good education for their children. His father went to other village to do work and came in night. His mother cannot tell anything to his father because he beats his son. They provided all those facilities which are used to study. In school teacher are careless they did not care students in half time. In half time, teachers went to drink the tea in shop and my son with friends came in home. Only few people are educated in our community and they understand the important of education. Now his position in class is 65<sup>th</sup> but in previous class his position was 50<sup>th</sup>. He plays songs on the mobile and learn to dance. In holidays, he goes to play game in school so nobody can meet in home. They wanted to provide the good education to his children but they broke their dream of education.

### **Respondent C**

Roshan Harijan was sixteen years old boy studying in grade ten, he lived in Piparahawa, Rohiniga. pa.-5, Rupandehi. He had six members in his family. His father's name is Ramkewal Harijan and mother's name is Biddhaya Harijan. His Father had passed grade 8 and mother had passed SLC. This school is located in his village so he reaches in within five minutes by walking on foot. He wants to be tailor which his

father's occupation is. His interested subject is science. He wants to study more but his main problem is he has to help his father daily in father's workload on the way of helping in home, also he got idea of his father occupation. Whole family needs depended on his father occupation. His father only earns money and provides some needs. By economic problem we are not able to take extra classes and mathematics became so difficult subject. He spends more time on helping on work of his father so he did not get time to complete his homework and practice the mathematical problems or questions.

According to his mother his father did hard work daily for this family and wanted to give a good education to his children. They are three brothers and one sister. His house was made by government. He always went to school and did not leave the classes. He is also an interested student in the school. He was very curious about his study and other works as well as intelligent also, so he was little bit different from others. The researcher asked with his parents about his daily life in his house and school. His mother said as they belong to very low caste. He said that he had lack of materials to study as other students in his class and sometimes he reached in school but his mind was at home because of work load.

### **Respondent D**

Neyamati Harijan was sixteen years old girl studying in grade ten. Her position in class is 56<sup>th</sup>. She lives in Parsha, Rohini ga. pa. -6, Rupandehi. She has eight members in her family. She has to do all the household works. She well understood the important of education but not got more time to study. Her mother and father both work in the field. Her economic condition is poor. She said "My father could not manage the money for my studies". Her parents are uneducated and unemployed. Sometimes her

father went to do work at other houses. Her plan after two years is to be a police or her aim of life is to become a police. According to her mother, in rest time she plays the game and watched the video.

While observing the mathematics class, the researcher asked to with her why you are so silent in your mathematics classroom. She replied, "My mathematics teacher is good and teaches well but I do not understand mathematics, when I ask the teacher again and teacher repeats the questions but I could not understand, so, I become silent in class". According to her mother, in school both students and teacher are careless in studying and teaching to students. She does not leave the class in half time but other students of my community they leave the classes in half time. She wanted more to study in home but her parents were busy in field and she has to do more work in house so, she do not get time to study.

### **Respondent E**

Mamta Harijan was seventeen years old girl studying in grade ten. She lives in Parsha, Rohini ga.pa. -6, Rupandehi. It takes fifteen minutes to reach in school from home. There were ten members in her family in the house and they all believed in Hindu religion. She spoke Bhojpuri language with her family and friends but Nepali with teachers. She was known as a disciplined girl in the class. Her interested subject was Nepali in school and her aim of life was to be a Nepali teacher. Her educational standard was decreased in comparison with her previous class. She had got 48<sup>th</sup> position in previous class but later her position was 49<sup>th</sup> in the class.

Her parents were uneducated. They spent whole time in earning money to manage their family. The researcher asked to her parents her study they replied, "We are uneducated, we ask her about her problem in study, we guided when she was in low

class but now in high class we cannot help her in every class and only dependent on class learning only, teacher were also careless in the school".In the period of covid-19, they bought mobile to help in learning but they listen songs and watched the video.

Finally, it can be said that there are four vital factors that roles in low achievement in learning mathematics of Harijan students. They are socio-economic condition, misuse of mobile, absence of father at home, and school environment.

### **Factors Affecting Low Achievement in Mathematics of Harijan students**

Such causes are explained separately as below:

#### **Learning Environment at Home and school(cultural discontinuity)**

Home is regarded as the first school to every child. They learn many things such as how to behave with other, how to respect the elder, how to love younger, how to cooperate to each other, how to behave with parents etc. Environment is the totality of the educational atmosphere in home and school. For good learning, home environment plays a vital role. It is true that the children's achievement in mathematics is highly affected by the home condition, parent's educational condition, and study opportunity at home. School is the second home of every child. School environment reflects belief and tradition of school community dealing the relation among parents, students and teacher.

The home environment of Harijan students did not support to learn mathematics. The researcher indicated that Roshan, Neyamati, and Mamta have to be engaged in household works. They do not have time to study at home. Due to they always cannot complete their homework and not get time to practice extra questions on

time. Teachers do not ask these types of students about their home environment. In home they learned by observing and doing things side by side. But they did not get chance as such in school. There are great difference between the everyday life of Harijan students and school practice. The everyday life of Harijan students in home and school practices are difference. In school they get theoretical knowledge like, they have to use theorem to solve different problem. But they practices practical works in their home cutting rice, grass, cooking food, feeding to domestic animals at home. Also, pronounce of numbers in home is different from teacher spoken in school. In home, land measure in dhur. Kattha, bigha, someone measure length by hand, paddy in Mana, Sei, Mani, Gon etc. which were used everywhere in the society. Some of the parents, they did not know about the units meter, centimeter, kg, feet, etc. and cannot guide their children about these units. Their parents and their works practice at home were not related mathematics problem at school and also teacher cannot connect culture related problem in teaching methods. This discontinuity between everyday life and school practice make Harijan students fell complicated on learning mathematics. So, they felt difficulties to learn mathematics.

When asked the question do you get sufficient time and learning materials to learn mathematics? The following responses were obtained.

*“My parents forced me to do work in field and cook food in morning and evening time, I have to wash all the pots that are used in home and I cannot get time to practice mathematical problems”.*

–Student’s view

The above view indicates that the Harijan student does not get opportunity of time from home to practice the mathematical problem. Only they get time in school. Lack of practice mathematics cannot be learnt.

*“My children do not get enough time to study because of workload, its our problem that to get food, we have to do hard work and they complete all house work and we earn money to do other work”.*

–Parent’s view

The above view indicates that due to poor- economic condition they did not have any more physical facilities at home. They have to do more work at home. So, they did not get time to study as other students. They have not any extra study materials that helps them to study mathematics.

### **Parent’s Occupation and Education**

The students pass their most of time in home. The children learn many things from their parents. If the parents are literate, moral, and have good characters, their children also follow same behavior. If the parents have bad behavior and are illiterate, their children learn that behavior from their parents. There is not only the role of teacher in learning process but also the parent’s awareness, education, their way of handling and guiding the family members, culture, economy and environment. The parents teach the basic knowledge of life, practical aspects, skillful concepts, right vision, appropriate norms and values to their children. If the parents have good education, they too try their best to enable their children academically. So they can live easily in society and inspire them to the right use of life’s every potentiality and opportunity.

When I asked about their parent's occupation and education, the following responses were obtained.

*“Our parents are illiterate they could not read anything but write their name only. So our parents cannot give any idea to learn mathematics at home”.* –Student's view

*“I have not studied so I cannot help them, I depend on mathematics teacher what he taught in school”.*

–Parent's view

*“The parents are illiterate. They do not give the guidance to them for learning mathematics. Their children do not complete the homework regularly. Due to this reason they become weak in mathematics subject”.*

–Teacher's view

The above mentioned view manifests that due to illiterate parents Harijan students are not getting expected achievement in mathematics. The parents do not guide them in home and always avoid to take responsibility to provide educational environment in home and also they have to do hard work in home. The Harijan students did not complete their homework regularly in mathematics, due to lack of sufficient time at home for mathematics practice and lack of guidance of parents they become weak in mathematics.

The constructivism theory elaborated that the students had high achievement in mathematics if there is good educational guidance otherwise the achievement would be low. Finally it can be said that the lack of educational guidance at home is another responsible factor for low achievement in mathematics.



### **Socio-economic Condition**

Generally the below castes and Dalit are below the line of poverty and among these castes, Harijan is one of the caste who live under the poverty. Poverty is an obstacle which effects on every aspects of the life. In this present context, the cost of education is very high. The people living under the poverty are not the expected group of private schools. Though the fee is not necessary in government school the necessary things for students like copy, pen, books, bags, dress, pencils, tool box etc. Some of them are provided by school but some are not provided by government in school. Educational tours, tiffin and the matters of entertainments are out of reach to the students of poor family which are necessary for students. The poor parents cannot provide all these necessary things to their children and these factor affects in the learning process of the students. The head teacher of school gave his view in this way:

*“The government has provided facilities to the Dalit students in the school. But these facilities are not sufficient for the Dalit or Harijan students. The especial economic package should be launched by the government to the students of Dalit because the poor parents cannot expend money to their students for their education”.*

–Head teacher view

The researcher asked, what is your family’s income sources? The students gave their view as:

*“Our family income depends upon agriculture and labor which is not sufficient for us it is difficult to manage daily expenditure of home. We do not have tuition class to improve mathematics as other students”.*

-student’s view

To analyze the socio-economic factor from constructivism theory, the present case has low socio-economic condition which causes spending more time in earning livelihood

for survival. On the other hand they spend less time in study for learning mathematics which requires more time to practice but they do not provide more time. As a result the mathematics learning is hindered. These consequences cause low achievement in mathematics of Harijan students.

### **Teaching Strategies (Lack of related materials and practice)**

Teaching strategies play a main role in the achievement of students in mathematics. It includes all the functions that are used teacher-directed structured practices with students. Teaching techniques is the part of teaching strategies. It is directly affected in low achievement of Harijan students in learning mathematics.

Interaction is the social activity and may be within persons and between persons. Within person interaction refers to the mental activities with her/his mind and soul. It depends upon the personal intellectual capacity. Inter-individual interaction refers to the personal co-operation and adjustment between two or more persons. According to Ogbu (2001) learning takes place through environment and culture between home and school. For better mathematics learning there are important roles of related materials and practice the mathematical problem in home. Teaching materials help to build the permanent knowledge and practice makes him/her perfect that means different types of skills were developed to solve other related problems in daily life.

The following opinion was obtained about the learning material available on school:

*“There are some teaching materials but our mathematics teacher does not use them, he solves questions only by using formula and says to practice question from practice book but we have no practice book”.*

-Student's view

*“The school has not enough teaching materials for mathematics and science lab. Also, the school's future plan to manage required materials and some computers for teaching and also for official use and add more books on the library”.*

- Head teacher's view

*“Harijan students do not keep interest in mathematics they never ask questions in mathematics class and if they appear in the class they take back seat”*

.-Mathematics teacher's view

The above views show that for selection of teaching method and using teaching materials in classroom always dominate the students. But the modern view of learning emphasis more collaborative and co-operative methods for teaching and learning mathematics. Also, if students practice mathematical things learnt in school then it will be applicable and established for long time.

### **Teacher and Students Relation**

Teacher and students relation is one of the relation which happens in school. Teacher is the fate maker of students and s/he is the guider of student's educational progress. So, the teacher's behavior toward the students affects in every individual's learning. In the classroom practice, the relation should be co-operative and supportive for mathematics learning. The interaction between teacher and students, students with students refers the relation in the classroom. Students always becomes co-operative and teacher becomes a facilitators in the classroom practice.

Teacher and students relation should be respectful and co-operative to each other without using any self-interest. Teacher should be co-operative and helpful to keep relation last long with the students. On the other hand the students should be faithful and keep interested to learn something from the teacher which keeps relation strength forever. The relation is a condition where both of them should keep their promises to be last long.

The respondents have following opinion to the question why do the Harijan students get low achievement in mathematics.

*“Harijan students sit in classroom being silence but they do not response anything as they understand or not”.* –Math teacher’s view

*“Lack of so much teaching materials in school so, I am unable to use material and techniques in classroom and classroom is so much crowded”.*

–Mathematics Teacher’s view

*“Students from this community are of shy nature, they take away when they see their teacher on the way and their parents are illiterate who do not guide their children to respect other”.*

-Community people

The above view also shows that the students from Harijan community are not feeling free to ask and share anything to other in school. They cannot ask the questions to the teacher when they do not understand problem of mathematics. So, there is not a good relation between teacher and students for their better achievement in mathematics, students must have to participate in every activities by motivating because motivation

is the foundation of learning which encourages, make and excite the person to learn from inner self.

### **Classroom Observation**

The teacher went to the class first, and then the researcher also entered the class. All the students stood up and said good morning sir. The teacher also told them sit down. There were 48 students out of 68 in the class ten. Physical environment of classroom was good. When the teacher started to teach mathematics, he reviewed the previous lesson of simplify then wrote a problem from textbook and solve the problem in the whiteboard by explaining it step by step. After one demonstration, he gave one more problem to the students to solve. The teacher then just walked among the students and guide them who could not do anything. At that time the classroom environment was seen disturbing with noise. Mostly in the process of teaching teacher used method and strategies was lecture/problem solving method in the teaching of mathematics. This episode shows classroom environment is controlled by teacher according to his method or strategies in the classroom.

It can be concluded that from the observation of classroom, the teacher mostly used lecture method. Though, sometimes I found him with using problem solving method but it was not sufficient. Student's participation was poor. The classroom environment was authoritative. The class lacks students' friendly environment. Thus we conclude that traditional type of lecture method was one of the cause for low achievement.

### **Episode**

In the school visit in the observed class in mathematics teaching using teaching materials. Researcher also entered in the classroom with daily using

materials. Researcher also entered in class with mathematics teacher in the classroom all the student stood up and said good morning sir. Also teacher said good morning and sit down. Teacher opened the book and wrote a problem from the book on the whiteboard with giving some concept. It could be seen that all the students were engaged to write the solution from the whiteboard. Sometime teacher asked do you understanding and some student say yes and some person No but Harijan students do not response about teacher question. Again teacher gave a problem to students for individual practice. It could be seen that all the students were engaged to solve the problem. Most of the students checked their class work but only one Harijan student checked his class work and other Harijan students could not solve the problem. But teacher did not respond on them (Harijan students). Teacher started another problem. The class was finished and teacher gave home work for remaining questions of exercise.

From above classroom activities, researcher found that the Harijan children often remained silent, frustrated and hesitated to take part in learning activity because lack of prerequisite knowledge of related chapters. The children generally afraid of asking question to the teachers. They felt problem to ask the questions in the class due to their fear that the teacher did not understand and become angry. Harijan students most often receive dominated behavior and have to cope with humiliating environment in the class only because their poor community participation in education. There is not proper communication with mathematics teacher and Harijan students in mathematics classroom. It shows that the culture of home is also influencing factor for the learning mathematics. So, interpersonal relations also influence to learn mathematics and they feel difficulty in learning mathematics. Here according to the theory of cultural

discontinuity, Ogbu (2001) argued that due to the cultural discontinuity between home and school, children face problems in learning mathematics.

### **Irregularity in school**

Irregularity is one of the main problem of all low caste students in school in mathematics class. They are compelled to go their school after the completion of their household work is their family concept. To approach the school is the second priority for some parents of this caste because their first priority was to manage food to survive their lives. For which they have to be engaged in working on the farms or other work related to their parents works at home. Some fathers of students were in other country to earn money, they had to do hard work at home and result of this hard work they had to leave their mathematics class. So, they were unable to understand the left class and low achievement in mathematics.

The data provided by the school can be presented as below:

1.	Respondent A	1.	Average attendance is 16 days/ month
2.	Respondent B	2.	Average attendance is 12 days/ month
3.	Respondent C	3.	Average attendance is 14 days/ month
4.	Respondent D	4.	Average attendance is 11 days/ month
5.	Respondent E	5.	Average attendance is 4 days/ month

Source: Students attendance in register of school.

The above mention data presents that their attendance in their school is miserable for some students. It is concluded that, their irregularity in school is very high for some of

them and who are irregular in school had low achievement or very poor in learning mathematics.

*“I do not want to be absent in the class but father is not in home, he always goes to work and have to complete all work at home and become absent, do not understand absent lesson”.*-Student’s view

*“It is so difficult for each students due to their irregularity. Students should be engaged in exercise, after the completion of basic knowledge. But due to their irregularity in the class, we get confused whether to revise the lesson or initiate new exercise. Therefore, irregular students can’t make their humiliation and they cannot proceed forward in learning. Thus, Harijan students feel that mathematics learning is very hard”.*

–Mathematics Teacher’s view

From the above responses the researcher concluded that there is the problem of students that makes unable to present in school. They do not want to stay at home on school time but they have so hard housework which justifies that there is a great problem in mathematics learning. The study also shows that many Harijan students are unable to go to school regularly which is far from their interest. The low economic condition, workload at home. Therefore, such irregularity creates the great obstacle in mathematics.

Hence, the researcher found that the culture of Harijan students at home and school were unmatched. So, the Harijan students felt difficulty in mathematics learning. It is said that home environment of Harijan students is not in favor of the mathematics learning and school environment is not conducive for mathematics learning. The low socio- economic condition, engaging on household works and farming and other occupation, unmatched environment at home and school, negligence of parents



involvement, not sufficient learning opportunity at home are the main factors that obstruct in creating proper learning environment at home and at school.

## **Chapter-V**

### **SUMMARY, FINDINGS, CONCLUSION AND**

### **RECOMMENDATIONS**

This chapter deals with the summary, finding from the discussion of chapters and conclusion and recommends for further study. It also comprises educational implications, which are also discussed on the basis of overall study of the Harijan children.

#### **Summary of the Study**

This was a case study related to the difficulties and causes of low achievement in learning mathematics of Harijan students. The main objective of this study was to explore the causes that brings low achievement in mathematics of Harijan students. To fulfill the objective of the study and to analyze and interpret that data, the researcher has developed the conceptual framework in literature review altogether. The researcher had done the different activities to complete this objectives like classroom observation, school document analysis, in-depth interview. The researcher has maintained the reliability and validity of these tools with the discussion of subject experts, supervisors and educational researchers.

This case study was based on qualitative research approach. To investigate the causes of low achievement in mathematics, the population of this study consists of all secondary level Harijan students of grade ten from Piparahawa Secondary School,

rupandehi. The sample of school was taken purposively. Five low achieved Harijan students in which three boys and two girls were taken on the basis of mathematics score of previous exam as the case students. The researcher used mainly these tools to collect the data they are case study, observation, open ended interview and document analysis. To analyze and interpret the data at first the collected information was categorized according to category. And different themes were considered as a code, the similar code version of the respondent were collected together and explained in their perspective.

The main objectives of the study were:

- ) To explore the causes that brings low achievement in mathematics of Harijan students.
- ) To identify the strategies managed by school and home to improve mathematics achievement.

### **Findings of the study**

Finally the recorded information was analyzed and obtains the following findings:

- ) Most of Harijan parents were illiterate and they use their children as a means of earning to support their family.
- ) Parents are uneducated and wanted education for their children but they are not supported by economic.
- ) There is discontinuity between practices of mathematical concept in school and home.
- ) There is cultural discontinuity at home and school as they get practical knowledge in their home and theoretical knowledge at school.

- ) Financial condition is not strong enough to send their children at school at can't afford them in their further education.
- ) The teacher have equally behaved the students. Mathematics teacher had not motivated the Harijan students in mathematics class.
- ) Beside the learning, the Harijan students participate more in the sports like cricket, football etc. in school.
- ) The use of teaching materials in mathematics class by the teacher by the teacher is very less. There is only the use of the teacher centered method.
- ) Household work becomes one of the burning problems for the students to study.
- ) Harijan students do not get encouragement and motivation at home and school.
- ) Harijan students and their teacher relation do not see to dependable and cooperative to each other.
- ) School has a continuous communication gap with guardians.
- ) In home environment parents education, poverty, lack of time to study at home, behavior of the parents were the causes of low achievement in mathematics.
- ) The school was trying to reduce problem of mathematics failure by managing extra classes in the morning and evening. But in the period of covid-19 these facilities are not available.
- ) The school has vision of co-operative relationship with guardians but few of the guardians were found to be active.

- ) In the period of covid-19 these students have android mobile to learn by watching video but they use the mobile for listening songs and chatting on facebook.
- ) Most of the Harijan students do not have father in home, they do not understand their mother in home and they do unnecessary things with friends.

### **Conclusion**

The researcher concluded that the low achievement in mathematics of Harijan students from the sample school, analyzing with the themes and related document. It becomes the focal point that has affected the everyday life of Harijan students. Comparing to other students of Harijan student, there are many factors that affect mathematics achievement of Harijan students.

Although the school seems to have qualified teachers but the teacher seems to be unable to maintain indifference and promote slow learners in teaching learning activities. Teacher's classroom behavior, illiterate parents, economic condition, interest of learner, assessment technique, teacher students relation, culture followed by them, learning environment at home and school, less participation in learning activities, misuse of mobile phone, absent of father at home, lack of practice the mathematics problem as homework were the main causes that brings the low achievement in mathematics of Harijan students. To resolve the failure rare in mathematics new policies of the school seems to have better educational attainment if the total school family cooperate each other and support from own area.

At last, it can be said that there should be the provision of teaching mathematics to the students of secondary level there should use the student center method teaching

learning and involvement in extra classes of mathematics without any charge and cooperative with parents in learning activities.

### **Recommendations for the further study**

Since Dalit students are taken as a low caste in our community, it is very difficult for them to maintain social decorum in the society; similarly they cannot go equally with others because of their socio-culture norms and values. To make Harijan students independent awareness should be brought. The conclusion of the study cannot be generalized to all private and public schools students and to all rural and city zones due to the limitation contained in this study. Thus, after analyzing and conclusion then implications of the study the researcher has made the following recommendations or suggestions for further study to validate the present study's findings:

- ) This study was done only in Rupandehi district as a case study. For the generalization of the result of the study, similar study should be done in a wide scope and large sample.
- ) The causes of low achievement of Harijan students in mathematics learning have been included in this study. The researcher who wants to study on the Harijan community should identify the affecting factors and solution of failure in mathematics.
- ) Generally the academic status of Harijan in every region is not same so the test would be better to compare Harijan students education of rural area with that of city area.

- J A study can be done on the effect of parent's education in their mathematics achievement.

## REFERENCES

- Acharya, B.R.(2016).Foundation of mathematics education.Kathmandu:  
DikshantPrakashan.
- Acharya, B.R.(2017).Diversity in mathematics education.Kathmandu: Pinnacle  
PublicationPvt. Ltd.
- Adhikari, S.K.(2006).Cultural Discontinuity and Difficulties in Learning  
Mathematics:MasterThesis, Kirtipur, T.U.
- Bastola, C. (2007). Factor affecting on achievement of Dalit students in mathematics:  
An unpublished Master Thesis FOE/T.U. Kirtipur.
- Bhattarai,C.(2016).Causes of low achievement of Tharu Students in Mathematics:  
Master Thesis FOE/T.U. Kirtipur.
- Chaudhary,A.K. (2014). Causes of low Achievement of Dalit(Musahar) Students in  
mathematics: Master Thesis FOE/T.U. Kirtipur.
- Dahal,B. P.(2011).Causes of low achievement in mathematics of Magar students: An  
unpublished Master Thesis FOE/T.U. Kirtipur.
- Ghimire, A. (1997). Factor affecting teaching and learning mathematics at secondary  
level: An unpublished Master Thesis FOE/T. U. Kirtipur.

- Khanal, P.(2017). Research Methodology in Education. Kathmandu: Sunlight Publication.
- Ogbu, J. (1982), Cultural Discontinuity and Schooling. *Anthropology and education quarterly*,13(4), 290-307.
- Ogbu, J.U. (1993). Differences in Cultural frame of reference. *International Journal of Behavioral Development*, 16(3) 483-506..
- Ogbu, J.U. (2001). Understanding Cultural Diversity and Learning. In Bhallantine, J. and Sapde J.Z. (Eds.) *School and Society*. (pp.334-354). California:Wadsworth/ThomosLearning.
- Pant, G.K. (2014). Causes of low achievement in mathematics of Girls students: MasterThesis, Department Mathematics Education, T.U.Kirtipur.
- Paudel, T. (2016). Attitude and Achievement of Students in Mathematics, Kathmandu: Council for Mathematics Education Nepal.
- Tharu,R.P.(2004).Impact of socio-economic status on mathematics achievement of students.Master Thesis FOE/T. U. Kirtipur.
- Yadav, H. (2008). The causes of low achievement in mathematics of Musahar students. Master Thesis FOE/T. U. Kirtipur.
- NPCS, (2014). Population Monograph of Nepal, Kathmandu: Central Bureau of Statistics.

*<http://www.google.com>*.

*<https://en.m.wikipedia.org>*

**Appendix-A**

**Individual Students Record**

Name:- Class:-

Roll No.:- Age:-

Address:-Date:-

.....Pradesh.....District.....

VM/MP.....Ward No. ....Village

Name of school:-

Girl/boy:-

Religion:-

Position in previous class:-

Number of family member:-

Father's name:-

Occupation:- Education:-

Mother's Name:-



Occupation:- Education:-

Interested subject:- Aim of life:-

## **Appendix-B**

### **Interview Guideline for Mathematics Teacher**

Name:- date:-

Qualification:- Sex:-

Experience in teaching:- Age:-

Address:-

Interview guidelines

- Teaching strategies to Harijan students.
- Problem in teaching Harijan students.
- Encouragement and motivation to the Harijan students.
- Participation of Harijan students.
- Teacher and students relation.
- Dominance of language.
- Teaching and learning environment.
- Teaching methods.
- Teacher view about Harijan students.
- Student learning habit.

- Use of homework and classwork.
- Facilities provided by school.
- Extra class for low achiever.
- Teaching and learning practices environment in the school.
- Causes of low achievement in mathematics.

### **Appendix-C**

#### **Interview Guideline for Students**

Name;- Date:-

Roll No.:-Class:-

Address:- Sex:-

Interview guidelines

- Teacher behavior towards them.
- Opportunity to learn at home.
- Opportunity to learn at school.
- View towards mathematics teacher.
- Family background/support.
- View about mathematics language.
- Homework and classwork.
- Family support in learning mathematics.
- View about school environment.
- Regularity in school.
- Opportunity provided by school.
- Teaching method.

- View towards causes of low achievement in exam.
- View towards school policy for low achieved students.
- Income source.
- Time for using mobile.
- Condition of parents at home.

## **Appendix-D**

### **Interview Format for Parents**

Name:-Age:-

Qualification:- Occupation:-

Name of his/her child:-Address:-

Sex:- Monthly income:-

Interview guidelines

- Individual description.
- Parent's view about education.
- View about school and teacher.
- Obstacles of Harijan children in school.
- View about cost of education.
- School and home environment in learning for students.
- Guidance of mathematics learning.
- Occupation of the family and their income sources.
- Number of children that they have.
- Expectation from school.

- View towards schools facilities and policies.
- View on using mobile and catting on facebook.
- Access of materials at home.
- View on giving time for practice at home.

## **Appendix-E**

### **Interview Guidelines for Head teacher**

Name:- Age:-

Qualification:-Occupation:-

Sex:- Address:-

- Teaching strategies toHarijan students.
- Problem in teachingHarijan students.
- Encouragement and motivation to theHarijan students.
- Participation of students in learning activities.
- Teacher andHarijan students' relation.
- Teaching and learning environment.
- Teacher view aboutHarijan students.
- Students learning habit.
- Facilities given by school.
- Extra class for low achiever.
- Teaching and learning practices environment in the school.

- View about busyness on mobile phone.
- Access of related material in school.

## **Appendix-F**

### **Interview Guidelines for people between home and school**

Name:- Age:-

Qualification:- Occupation:-

Sex:- Address:-

- View on spending time with friends.
- View on economic condition.
- View about their concept on education.
- Condition of their parents at home.
- Busyness on using mobile phone.
- Their community's economic source.
- Parents' relation in home.
- Marriage age in their community.

## **Appendix-G**

### **Main Topic of Observation Area**

- Regularity of Harijan students in mathematics class.
- Regularity of mathematics teacher in class.
- Learning behavior of Harijan students.
- Relationship between Teacher and Harijan students.
- Learning environment at home.
- Friend's behavior towards the Harijan students.
- Children's involvement in household work.
- Participation of Harijan students in teaching learning process.