

## **Chapter I**

### **INTRODUCTION**

Achievement is concerned with teacher curriculum problems and administrators in education sector. Most students have desire to be successful in his/her class however most of them were fail. Moreover, many of them also fail to reach the academic level due to different cases that affect math achievement. Achievement appears to be a common phenomenon in our school and many students are suffering from low achievements in math.

In spite of increase, focus on education proportion of people in many countries are still being defined its full benefits. In developing countries like Nepal, it is the issue that poor achievement of the students in mathematics. It is the responsibility of every country to take the necessary steps to ensure their students maximize their academic potential. Realizing the potential of every individual child should be center of any education.

Achievement of an individual is an outcome of his mental and physical potentials beside the experience he has gained in the process of exploration and learning. In a study considering the factor of the school achievement, it is the possible to may be ignoring those aspects in which individual different from one another. The question answer why such a difference in achievement appears when the school more or less uniform instructional and environmental facilities? Is the difference due to the certain psychological factors? Does the difference depend upon inherent qualities? Which account for all difference in scholastic achievement? Those questions appear in the mind of the educators, educationalist and the psychologist, but with hardly satisfactory answer. Various investigations have explored numerous factors, which were found responsible for academic success and failure. It has been widely

documented that the academic achievement of students linked to number of social cultural variable.

### **Background of the Study**

A student who is unable to work properly because of their physical conditions, mental, psychological conditions etc. and unable to learn easily is called disabled students. In this study, the students who are physically disabled will involve. The numbers of disabled people are increasing day by day because of the starvation and malnutrition as well as heredity. The disabled students can't learn easily like normal students. They need special education with different types of teaching learning materials; training and trend teacher are required. In Nepal, special education for disabled students started with the established of blind section in laboratory school Kirtipur in 1964. In 1966, a school for deep and visually impaired was established by Bal Sanshthan, Naxal in Nepal. After this, non-government school for disabled students, "Khagendra Nawajeevan Kendra" runs under Nepal Apanga Sangha. A special education was established for the coordination of special education program and school for deep and visually impaired students expanded in Surkhet.

Mathematical knowledge is essential for 21<sup>st</sup> century so, every man should have good knowledge in mathematics. However, the disabled students have low achievement in mathematics because they are physically, mentally, or psychologically poor. They are backward in a society, home and peer. They have no any good opportunity to study mathematics as their needs.

Mathematics is a subject that affects all aspects of human life at different level. Mathematics is seen by society as the foundation of scientific technological knowledge that is vital in socioeconomic development of nation. It is realization of the vast application of mathematics that made Eraskhuemen, (2003) to posit that a

discipline and ordered pattern of life can only be achieved through the culture of mathematics.

Nepal government has made mathematics as a compulsory subject even in primary level. All the students including disabled and normal should be taught this subject. Method of teaching may be different according to this situational and the nature of the students. Disabled Students have also their own needs and desires like normal students. Therefore, these students are inspired to go school and receive. Their education but people behave differently with disabled students in comparison to the normal students. So, these students are inspired to go school and receive their education but people behave differently with disabled students in comparisons to the normal student in our society. It is said that it is the result of evil work of former birth. Because of this concept disabled students are always dominated which ideas them back than normal students.

While tracing out the history of mathematics teaching that in the context of Nepal, we should not forget the mathematics is the form of "Astronomy" or Astrology" known as Jyotish and Siddhanta Anit Jyotish taught in Sanskrit education. Actually, the formal education of Nepal was started from Durbar school in 1910 Ashwin 27 established by Janga Bahadur Rana. This school was opened specially for royal family firstly. At that time, classic arithmetic at lower level and Algebra and Geometry at upper level are taught. After the establishment of SLC board in 1934 AD. The first curriculum was introduced for secondary level in which mathematics was divided into compulsory and optional part and out of 800 full marks, 100 marks was given for each part.

From aforementioned above discussion, this research told us that all the NGOs, which works for the disabled students for their bright future. The main

purpose of these institute or Sangha is to provide the education for mentally, physically or socially disabled students. However, Khagendra Nawjeevan Kendra was established for education of disabled child. Government of Nepal also provides different facilities for disabled child or their informal education as well as formal education. It does not merely provide such facilities but also provides foods, wheelchairs etc. The main purpose of government of Nepal is to encourage the disabled students for the betterment of their lives in the field of education.

The aim is to focus in this topic is that, the achievement level of disabled students in mathematics is very low. According to the school record of Khagendra New Life Special Education Secondary School report in 2069 B.S., there are 9 disabled students involved in examination, only one student was passed, in 2070, out of 6 disabled students only one students was passed and in 2071, 8 disabled students are involved in final examination and no any was pass. From the above result clearly shows that the achievement level of disabled is very low. Therefore, researcher has tried to find out the real problems that affect the good achievement of disabled students. The researcher researched Khagendra New Life Special Education Secondary School, which lies in Jorpati Kathmandu Nepal. In this school maximum of disabled students are studying.

### **Statement of Problem**

Out of the total population, 2,64,94,504 people, 768341 (2.9%) people are disabled (CBS: 2011). Disabled peoples are one of the most dominated in our society or culture. Many people felt that the disabled students are unable to learn mathematics than the normal students.

Many researches show that their educational achievement is not satisfactory. It is also in mathematics. Mathematics is considered as in essential component of

school or in our daily life. Mathematical knowledge has become a major factor for every student to his/her career development. The general class of school is not sufficient for the disabled and they need extra classes and alternative materials and method. In the modern world, all the sciences and technology depend on mathematical knowledge. However, the disabled students are poor in mathematics, so this study tries to focus in “causes of low achievement in mathematics.” We can see that disabled students are more back warded in education, which is also in mathematics. Therefore, this study has focused to find the answers of following questions:

- ❖ Why the disabled students have low achievement in mathematics at grade X?
- ❖ What kind of learning environment is provided to the disabled students?

### **Objective of the Study**

The general objective of this study is to find out the causes of low achievement of disable students in mathematics. The specific objectives of this study are:

- ❖ To analyze the causes of low achievement of disabled student in mathematics at grade X.
- ❖ To explore the learning environment provided to the disabled students.

### **Significance of the Study**

Mathematics is an important subject for schools and higher education curriculum. It is necessary for the students to conduct his/career development. Therefore, every student should drive for the better result. Without better results neither, the students get change for further study nor get entry to in any job. The objective of any mathematics curriculum includes promoting favorable feelings towards mathematics as well as importing cognitive knowledge.

The significance of this study were summarized as followings:

- ❖ This study would be helpful for the mathematics teachers, researchers, curriculum designers and other stake holders related to education.
- ❖ This study would provide the information about the educational condition of disabled students in mathematics.
- ❖ This study would help to different NGO, INGO's and other disabled supporting organizations for their plans and programs.

### **Delimitation of the Study**

The delimitation of this study is given below:

- ❖ This study was conducted in Khagendra New Life Special Education Secondary School, Jorpati Kathmandu.
- ❖ This study was limited only to disabled students of grade X.
- ❖ This study was limited only to find the causes of low achievement of disabled students in mathematics.

### **Definition of Related Terms**

#### **Disabled Students**

In this study, disabled students means the students having eye defect, leg defect and hand defect out of four disabled students one of them is girls and three are boys. They would have to face many difficulties when they go to school two students having disabled with legs, one with hands and one the above four disabled students, which they would face in their lives. The students having disabled with legs have the main psychological problem as they are discouraged as well as hated by their peer and the others. One problem is that they cannot participate indifferent extra activities in class as well as school.

### **Low Achievement**

The term low achievement is defined as the score less than D obtained by the students in the final exam of grade X.

### **Teaching Methods**

The strategies of how learning of the students is called teaching methods, what types of teaching methods of materials used mathematics teacher in learning processes on select school.

## **Chapter II**

### **REVIEW OF RELATED LITERATURES**

Review of the related literature is an essential part of all researchers. It is way to discover what other researchers in the area of the ones problem have covered. A researcher must have deep knowledge of already established theories and researchers. The previous studies cannot be ignored because they provide the foundation to the present study. Below are some of the reviews of these studies, which are relevant to the present study.

#### **Empirical Literature**

Paudel (2002), studied on "Instructional problems in the blind schools of Nepal". The objective of this study was to find out the instructional problems in blind schools of Nepal and studied with 25 sample students, and their teachers of Gyan Chakshyu Secondary School, Dharan, Khagendra Navjeevan Kendra Jorpati and blind section of Laboratory Secondary School Kirtipur by using the classroom observation from an interview, as the instrument of the data collation for his survey. And this study concluded that blind schools of Nepal are facing numerous problems, attempts for strengthening blind education are yet inadequate. Regular and consolidates economic support are lacking social superstitions and blind believes have laid adverse impact over the blinds. The blind themselves are frustrated and are suffering from inferiority complexes. Such difficulties have affected instructional procedure of the blinds school.

Ghimire (2005), did a case study on "Difficulties on learning algebra of blind students". The objective of the study was to identify the difficulties on algebra and to identify the difficulties on classroom practices. This study was conducted with sample size of four blind students from a school for deep and visually impaired Ram Thapa



of Kamalpokhari, Nakshal Kathmandu. The students were selected by random sample process. Different tools as observation, interview and written test were applied to identify their learning difficulties on algebra. This study found that the blind students were able only add, subtract, multiplication of simple very short algebraic terms, but were unable to divide. They had the limited knowledge about the factorization, HCF and LCM. They were familiar to the equation but did not solve it.

Adhikari (2006), conducted a research on "Teaching attitude towards the integration hard of handicapped students on mathematics in general school". The objective of this study was attitude towards the integration on hard of handicapped students in general schools. In this study 42 teachers of general school with resources 15 classes of deaf school from Jhapa, Morang, Sunsari, Ilam, Udayapur and Dhankuta. In this research researcher used survey method to collect the desired data.

The findings of this study shows that the there is significant difference in the attitude of teachers working in general school, resource and special school for deaf towards the integration of hard of deaf teachers have a significantly more favorable attitude than the special school teacher.

Luitel (2007), did a study on "Difficulties areas in arithmetic for grade VIII deaf students". The objectives of this study were, to identify the difficulties in arithmetic and to locate the difficult area as to relate them to their case. The students were chosen by random sampling process and observation and interview were used to identify the learning difficulties. This study concluded that deaf students have fundamental knowledge of mathematics but in academic course they were feeling difficulty in learning mathematics because of various reasons such as: to develop clear conception on verbal problem, to generalize the learned concept, to understand the language association, limited vocabulary in mathematics words, fast forgetting to

discriminate the condition of the situation. These difficulties are not only due to their problems but due to the lack of supportive environment such as teaching methods, instructional materials, students will and motivation, social interaction and their place in the family and society etc.

Sharma (2007), studied on "Problems in learning mathematics of the blind students at the secondary level". The objective of this study was to find out the problems in learning mathematics of the blind students at the secondary level in Gorkha district.

This is a case study including four blind students at grade X in Gorkha district. This study concluded that there were individual differences of blind students. The average, dull and intelligent blind students were not equally benefited in the integrated classroom. There was not separate curriculum for the blind students. At last researcher was recommended that available special instructional materials should be provided for the blind schools, separate special instructional material should provide for the blind schools. Special curriculum should be framed for the blind students.

Louice (2008), studied on "Math education practices for students with disabilities and other struggling learners: case studies of six schools in two northeast and island region states". In this report describes in depth practices at six schools, that are making targeted efforts to improve math education for students with disabilities and other struggling learners. It examines each schools' practices for improving the math learning of all students as well as specific supports for students with disabilities and other struggling learners and identifies the challenges that schools face to serve students with diverse needs. The findings of this report are insufficient staffing for student math support and insufficient time for math instruction, inadequate math content knowledge among any teacher, lack of high quality math assessment and

interventions for students in lower grades. The inherent difficulties are also causes of raising achievement levels among students with high and often multiple needs.

Adhikari (2010), studied on "Problem faced by blind students in learning geometry at secondary level" the main objective of this study was to investigate the main geometrical problem faced by visually handicapped students. This study also focuses to identify the area of difficulty in the content of geometry for blind students.

To fulfill the above objectives, the researcher was conducted case study design and descriptive method was to interpret the obtained information. The population of the study was all the blind students of Nepal. However, by purposive sampling researcher selected Namuna Machhindra Boarding School, Namuna Machhindra Higher Secondary school, Lagankhel, Lalitpur and Laboratory Higher Secondary School, Kirtipur. For this study the researcher had selected four students on the basis of random process.

The main findings of the study were there were individual differences among the blind students. The average, dull and intelligent blind students were not equally benefited in the integrated classroom. There is no separate curriculum for the blind students. The geometrical parts of mathematics were main problem of the blind students.

Yadav (2014), studied on "Mathematics learning problems of disabled students", this is a case study related to the difficulties and causes of difficulties in learning mathematics of disabled students. The objectives of this study were to find the areas of difficulties in learning mathematics of the disabled students and to find the causes of difficulties of disabled students in learning mathematics. This is a case study which is qualitative in nature. This study was conducted with the sample of disabled students of grade IV and V selected from the Shree Madanpur, Jamunia,

Binagra Higher Secondary School Madanpur Sarlahi chosen purposively.

Face to face interviews have taken with students, parents, mathematics teacher and head teacher. The findings of this study have found based on data analysis and interpretation of the result. Being based problems of mathematics learning of disabled students are related to instruction, methods, materials, pre knowledge and students and activities of students' teachers.

The finding of this study shows that, there is the negative attitude and believes and less interest of disabled students on mathematics learning, also poor evaluation technique are problems on mathematics learning. There is lack of interpersonal relation. There is no proper interaction between teacher and students. Due to the economic conditions, parents' illiteracy, language problem the students are not regular in school. The home environment and school environment are no support for the mathematics learning. Disabled students receive the dominating behavior at school. They are discriminated by other students as well as teacher at school. Students have no sufficient time for mathematics learning at home. The study has also shown that the financial conditions are not strong enough to send their children at school.

### **Theoretical Literature**

This about "how achievement of disable students" is based on the socio-cultural theory. Every child learn from society. Form social cultural theory of mathematics learning are generally associated with the seminal work of Vygotsky (1978) by prioritizing the socially and culturally situated nature of mathematical activities over individual sensory. Motor functions identified three general themes of fundamental to his theory of development. Higher mental human process can be best understood by focusing on how and when they occur; higher mental processes such as memory, concept and reasoning, originate between people on the social plane before

appearing in the individual on the psychological plane; and cultural tools and signs. Such as language, writing and symbols indicated higher mental process. Skillful concept, right vision, appropriate norms and value of their children. If the parents have good education, they to try their best to enable their children academically.

### **Socio- Cultural Theory**

Socio- cultural theory grew from the work of seminal psychologist Lev Vygotsky (1978), for the development of higher order who believed that parents, caregivers, peers and the culture at large were responsible for the development of higher order functions. According to Vygotsky, “Every function in the Children's cultural development appears twice: first, on the social level, and later, on the individual level; first, between people (inter psychological) and then inside the child (intra psychological). This applies equally to voluntary attention, to logical memory, and to the formation of concepts. All the higher function originates as actual relationships between individuals.”

Vygotsky was a contemporary of other great thinkers such as Freud, Skinner, and Piaget, but his early death at age 38 and suppression of his work in Stalinist Russia left him in relative obscurity until fairly recently. As his work became more widely published, his ideas have grown increasingly influential in areas including child development, cognitive psychology and education. Socio-cultural theory focuses not only how adults and peers influence individual learning, but also on how cultural beliefs and attitudes impact how instruction and learning take place.

### **Theory of Fear**

Holt (1964) in his book, “How children fail” postulated that children fail because of fear in taught school. In “How children fail”, John Holt states his belief that children love to learn. But hate to be taught. His experience in the classroom as a

teacher and as a researcher brought him conclude that every child is intelligent.

However, the children become unintelligent because they are accustomed by teachers and schools to strive only for teacher approval, and the “right” answers, and consequently forget everything else.

This education system, children see no value in thinking, discovery and understanding but only in playing the power game of school. Children believe that they must please and obey the teacher, the adults, at all costs. They learn how to manipulate teachers to gain clues about what the teacher really wants. Through the teacher's body language, facial expression and other clues, they learn what might be the right answer. They mumble, straddle the answer, get the teacher to answer their own question, and take wild guesses while waiting to see what happens- all in order to increase the chances for a right answer.

They fear wrong answers and shy away from challenges because they may not have the right answer. This fear, which rules them in that school setting, does their thinking and learning a great disservice. A teacher's job is to help them overcome their fears of failure and deplore the problem for real learning. So often, teachers are doing the opposite building children's fears up to monumental proportions. Children need to see that failure is honorable and that it helps them construct meaning. It should not be seen as humiliating, but as a step to real learning. Being afraid of mistakes, they never try to understand their own mistakes, cannot, and not try to understand when their thinking is faulty.

### **Conceptual Framework**

This study related to the causes of low achievement in mathematics learning of students that is based on the theory of constructivism for learning. Constructivism assumes more collaboration of learning environment, which is proposed as the

effective learning procedure to develop the new knowledge of Disabled students, which indicate in a framework for the study. This conceptual framework describes about the causes of low achievement of disable students in mathematics in Kathmandu district.

The language, economic condition, learning environment at home and school, interaction with teacher and students, cultural norms and values plays vital role in learning mathematics. This case study was mainly based upon data analysis and interpretation of the result. The following framework is causes of low achievement of disabled students in mathematics are drawn from above theoretical and empirical review of the related literature.

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### **School Environments**

School environment is the totality of the educational atmosphere in school. School is the second home of every child. The teacher's students and parents are the components of the school. School environment reflect belief and tradition of the



school community delineating the relation in students and teacher. Scholarship to the students, extra class provided and dominance of language culture are the major aspects of school environment. The economics status of family influences to the achievement of the disabled students. The high economic status can get better chance to buy book, copies and take tuition and coaching class.

### **Cultural and Society**

Nepal is country of having diversity in terms of culture, religion, ethnicity, geography and so on. We live in a society. People have different activities in our society people have different attitude in the cultural and society. Some old people do not realize the importance of education but only few modern people give importance of disabled students education. If the majority of society does not encourage the disabled students, they participate less in education. They show poor interest in learning. Social cultural beliefs, practices and attitude often do not favor of disabled students in their pursuit of education to the same extent as other students.

### **Teaching Learning Process**

Learning for relevance was the suggestion of a direct positive correlation between students mathematics experience and their attitude of disabled students. Those students who participated in this study frequently referenced the connection between their learning styles and their development of disabled students in mathematics. As students shared their mathematical stories they included of learning styles they had experienced in the classroom that fit their needs. In particular interest was suggestion that a positive experience with learning styles resulted in a positive attitude.

### **Home Environment**

Home is the regarded as the first school to every individual. The students learn

how to respect elder and how to cooperate them each other etc. home environment the play the vital role in learning. Home environment reform the occupation, economics condition and learning opportunity of the students at home.

Parents education refers to academics qualification, awareness, moral and good characters of parents by whom children learn many things. There is not only the role of teacher in learning process but also the parent's awareness the education, environments and interest etc. There were different causes which affect in low achievement of disabled students in mathematics. Home environment, school environment, teaching learning method and culture and society were major component of the mathematics learning.

Several causes bring low achievement in mathematics of disabled students. Home is the first school of students. So, the home environment plays the vital role in learning mathematics.

In my research, the main cause for low achievement of disabled students. Those students are lack of practices, learning environment of home and school not doing homework and class work, lack of environment in motivation teacher student's relation parent's education occupation of the parents and socio- economics condition.

## **Chapter III**

### **METHODS AND PROCEDURES**

Qualitative research is the form of inquiry that explores phenomena in their natural setting and uses multi-methods to interpret understanding, explain and bring meaning to them. Qualitative research means type of research that produces findings not arrival by statistical producers. It is not mathematical analytical procedure. The basic meaning of gathering data is observation, opinion, students result in mathematics as well as teacher views. Case study deals with personal experience, life history interviews, observations, historical interaction and visual texts that describe routine and problematic moment and meaning in individuals lives.

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

The case study design was adopted for this study. The case study design is defining as research methods that investigate the real condition of the person in the past and present. The case study was focused to find out the causes, which affect the achievement of disabled students in mathematics at grade X in Kathmandu district. It was qualitative research as well as descriptive in nature. The nature of study being a case study was followed to meet the objectives of the study.

#### **Selection of Case**

The respondents of this case study were disable students, head teacher, math teacher and parents of selected students. The sample unit was selected purposively. Four different types of disable students' hand defect, leg defect, handicapped and blind were selected from Khagendra New Life Special Education Secondary School at grade X, by purposive sampling techniques. Four disabled students, math teacher, head teacher and parents of selected disabled students were selected for interview.

## **Tools**

Selection of data collection tool is the most important part of the study.

Qualitative method consists of many kinds of procedures to get information during the research. Data collection is the most important part of the study. The outcomes of the study depend upon techniques of data collection because the techniques provide actual way of the study. Many different methods and procedures have been developing to aid the acquisition of data.

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

### ***Class Observation Note***

The observation was also necessary to fulfill the objective of the study. So the researcher has used the observation form to collect necessary information to selected respondents. The researcher has observed the activities of key respondents in their class/school using in the pre-established observation form. The researcher has focused on socio-economic background, personal habit, family education, and relation to mathematics teacher of those key students.

### ***In –Depth Interview***

Based on objectives of the study the researcher has developed the interview schedules in unstructured form for the students, mathematics teacher and parents. To clarify the information interviews or to go in-depth of the information interviews was much more helpful.

In depth was qualitative study design. With the same respondents; several interview are taken in different times. The purpose of this response is to find out response of participation. It is the most affection methods where were used widely in collection primary data. It is media to express internal thinking, interest and thoughts

and logic and concept of disabled students.

Research used interview to find the target information from different respondent student's teacher and parents was used to collect information. Interview helped to find out the teacher behaviors and parents help and support their personal in depth interview towards learning mathematics. Interview of teacher parents help to analysis the cause of low achievement of disabled students achieve on mathematics.

### ***Published and Unpublished Documents***

Students attendance register, school result sheet and other records was reviewed for this study.

### **Validity of Tools**

For the validation of tools researcher has conducted the observation note, unstructured interview, and interview schedule, published and unpublished document based on conceptual framework. The researcher has used observation form to collect necessary information from the selected respondents and would take depth interview from the students, their parent's math teacher and head teacher in unstructured form based on the conceptual framework.

Validity refers to how well test measures what it is purposed to measure. Reliability and validity of the research tools was determined with the help of related theory and suggestion of subject expert. To determine the validity of research tools the interview was taken over a period with the selected samples. The frequent class observation was done to check the consistency methods and procedures used in classroom. The schools documents were gathered to and noted for the trustworthiness further cross match had been adopted to maintain the truest of the study. The researcher also tried to ensure the internal validity by observing the same data based on theoretical framework developed by the researcher in previous section.

### **Data Analysis and Interpretation Procedure**

The causes of low achievement in mathematics of grade X by disabled students were analyzed and interpreted on the basis of the framework that the researcher had already developed in the review of the related literature section. The researcher had used the data collection from the field by observation and interview schedule. The researcher had read all the data to obtain the general sense. To analyze and interpret the data the researcher first classified according to homogeneity and heterogeneity nature of data.

Then compared and analyzed the version of teacher, student and parents from the data collected through interview and observation through triangulation way of analysis. For this purpose, the collected set of data was coded on the basis of respondent and types of faced problem.

In that duration the researcher had taken face to face interview with mathematics teacher about the achievement of students in mathematics structured and unstructured question should be asked to the mathematics teacher and collected the information given by him. Class observation duration was one month. In that duration researcher had observed the students' interest to learning. Their attendance in classroom, performance of students and teacher continuity of the students in mathematics classroom. Teachers teaching style, teaching learning method and methodology's, teaching learning materials, teacher behavior towards disabled students, etc. in that duration researcher had taken personal interview with selected students in the different sector in structured and unstructured format and noted that points in his diary.

The researcher had taken face to face interview with the guardians of selected disabled students with the structured format. Different questions should be asked to

them about the interest of learning environment, learning opportunity of their children noted that points in his diary. The researcher has taken the unstructured interview with the head teacher about the teacher training, learning environment, teaching learning materials, different activities provided by the school.

## **Chapter IV**

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

This is case study related to the causes of low achievement of disabled students in mathematics at class X. The main objectives of this study were to analyze the causes of low achievement of disabled students in mathematics and to explore the learning environment provided to the disabled students. Interview schedule of students (Appendix-A), mathematics teacher (Appendix-B), interview schedule of head teacher (Appendix-C), interview schedule of parents (Appendix-D) and class observation note (Appendix-E). The main respondents of this study were focused students, their parents, mathematics teacher of class X and head teacher of Khagendra New Life Special Education Secondary School Jorpati Kathmandu.

This chapter deals with the analysis and interpretation of the collected information. At first, data was categorized according to the category of the respondents and different themes were given in the text view or the observation note. The researcher has as attempted to calculate the study describing and the analyzing the information acquired in the research process.

#### **Background of the Case Students**

Culture is the most distinctive attribute of human race. Today human beings are able to protect and transfer the cultural traits as per necessary cultural is not a pre-constituted object but must be created through human intention and action. The human is the main actor beside the certain, manipulation and interpretation of the culture. By virtue of human cognitive. As present civilization is possible. Culture is the creation and use of symbol. Culture may take as constricting way of life of an entire society, and this will include code of manners, dress, language, rituals, norms of the behaviors, system of beliefs (Dictionary of sociology). Cultural is all that



which is non biological and sociological transmitted in a society, including artistic, social ideological and religious pattern of behaviors and the techniques for mastering the environment.)

Disabled students content who do not walk, do not talk, do not see. So disable students have many problem in learning mathematics. The government of Nepal, they have not management of disabled student on remote area. But especially some place for disabled students managed the learning environments.

### **Learning Environment**

The objective of this study was to analyze learning environment provided to the disabled student. To achieve this objective, the researcher included disabled students to in-depth interview with the help of checklist and interview guideline for mathematics teacher and observation of classroom. The class was not homogeneous in term of gender class, language minority, knowledge teaching material etc. So, most of the teacher use traditional teaching method neither they used appropriate method nor materials in public school. Some teacher wanted to provide the good and appropriate teaching method, methods in classroom but they were failing because in each public school large class size and lack of physical facilities. So, many students has not taught us appropriate and most of disabled students felt difficulty to understand subject matter. There are so many religious of disabled student of low achievement in mathematics. Every students did not have good environment to learn at home in the term of parent education, economics status, over as for as traditional social value etc. At almost all guardians of disabled-student have intentionally and they did not know the value of education. so disabled student back warded in every field.

These themes were considered as a code and the similar code version of

respondent were collected together and explained in their respective. The school environment and other details were obtained by observing document analysis of the school. The home environment and other details were obtained by taking interview schedule with their parents.

Respondent "A" was eighteen years old boy studying at grade X. He was born in Gokarna, Kathmandu. Now a days he lived in same place where he was born. It takes at least 20 minutes to reach school from the house. There were six members in his family and they all followed Hindu religion. He had very weak economic condition. He has felt difficulty to go to school from the house. Due to disabled student without having legs. He has used wheel chair to go to school. He became usually absent in his school. He had poor economic condition and his father was general literate but his mother was illiterate and his father was small broker. The researcher just talks about causes of low achievement in mathematics. Every life was one of the components of the discrimination participation observation in the field the researches come to know. It seemed his family was poor in economic condition. Before going to school, he was busy in watching TV and other leisure time he was playing carom board. It is very careless for his study by the guardians. He felt that mathematics is very difficult subject. He did not complete his homework.

When researcher went to the school, he found the teacher behaviors was not difference between disabled and normal students. According to the school register he was so much days absence. When researcher observed his house the researcher found in poor condition economically. The researcher asked his father about his study in the home and he said

*“we have given him a lot of time to study but he has poor health condition so he cannot do better.”*

From the above statement, it can be concluded that he has enough time to practice at home but he has weak health condition, he cannot stand or sit properly, he always used to sleep.

After reaching school, respondent "A" gets engaged in study. The researcher just talks about the learning difficulties in mathematics with him. He told:

*"I can't do more practice at home because of my physical condition so it the causes of low achievement in mathematics."*

Firstly, children with borderline intelligence have difficulty learning concepts that are removed from the concepts of their lives. Concepts are learned more efficiently when they are presented in concrete manner. Disabled children with border intelligence do not transfer or generalize skills knowledge and learning strategies as well as their peers. The disabled children despite of learning capacity and learning space. Unequal capacity and ability is the common feature of human beings. The school system students performance or immunity power seems in long range. The students divide in to different categories like average students, gifted or talented students, below average or slow learner students etc. because of the learning capacity and academics performance. The group of students who are not able to achieve the concepts fast and apply the procedure at the defined level referred as slow learner of disabled students.

When the math teacher gave the class work, then he moved head here and there because he could not solve the problems. It seemed there was not full attention in his study by the mathematics teacher. Effecting teaching learning method is a most important factor to achieve the goal. Hence the period of mathematics was end without not solve his problem.

Respondent "B" was twenty-two years old girl studying in grade X. She lives in

Gokarna, Kathmandu. She has five family members but her father was not alive. The distance of her house and school is 2 km. She goes to school on foot. She is disabled student having no. When researcher observed her house and family, the researcher found her a very weak economic condition. She has also weak physical condition. Therefore, she has not much interest in school. the distances between her studies because of parents' occupation, poverty, lack of awareness of her parents.

When researcher observed in the school, her class roll no. is 28. Her interested subject is Nepali but mathematics is not interest subject for her. Nepal government has given scholarship to the disabled students. Never the less, the school or government gives no any other opportunity. Negative behavior of normal students to the disable students seems very in school. However, out of school, such behavior is remaining. She doesn't have good family environment to study. About her study, her mother told:

*“we are the men who pass our life by working daily wages. We have problem of food and clothes. So we cannot give attention in her study. The main problem is that we are economically weak”*

In the every classroom of the students, we confined these all types of students. School put emphases to the education of these average students rather than slow learners or disabled students whose learning strategies is different than average students is an emerging issues in the field or school learning environment. Low achievers, under achievers, educationally disadvantaged, culturally deprived, emotionally distributed are the category of slow learners. Although disabled learners or children may or may not have special educational needs, they do not have fit neat into the special education system. Disabled students different from reluctant learners. Those students are learner learn initially wants to learn, but those students have many

problem with the process. This statement tells, most of the disabled parents are poor and educationally backward, which plays the main role for low achievement of disabled student.

Respondent "C" is one of the eye defected student of grade X. He is the boy of 18 years old. His class roll no. is 29. In his family, there are six members. He was born in Ramechhap but now days he is in Riegal. He would have to face many difficulties in learning mathematics problems such as; he cannot see well in classroom.

His father is farmer and mother is a housewife. His mother is illiterate. She is laborious person when working in the field. However, she has not awareness to teach the children. There was no any concern about her children education. He has done friendship with naughty children who do not read the school and drop out the school. According to the school register, he was often being absence.

He said, *"The teacher behavior towards me is equality with other students. I study only one hour at home. Mathematics is a hard subject due to lack of study. There is no good behavior of other with me"*

Generally, disabled students is not motivated and can also be praise, aggressive, creating more problem for teachers and parents through non- cooperation. Disabled students have learning disabilities. But our context of Nepal, we are for behind in such as that skill we are influenced by the traditional mentality and the practice there are many reasons for the students to become who achievement of disabled student and learning mathematics, which are poor adjustment to school and mathematics class room, physical deficiencies, psychological and emotional problem below average intelligence level. In the remaining, he was playing with his friends. Sometimes he helps to his parents at home.

About the view of mathematics teachers' he is very poor student in mathematics. He is failed in mathematics in grade IX. He was just promoted pass in grade IX. He does not do homework. There is not any concern he about his study. These statements say that he has no interest in reading mathematics. As a result, he is very poor in mathematics. In addition, he has not any awareness about study.

Respondent "D" is 17 years old boy studying at grade X. He was born at Ilam but now he was in Narayantar Kathmandu. He was physically disabled student. He was using wheel chair, without wheelchair, he cannot move one place to another place. His family has 5 members. His father was carpenter and his income is not so good. He said, *"my father would not manage the money for us"* due to their poor economic problem. His house is small without not sufficient rooms. He said, *"Parents could not succeed to manage physical facilities what I need at home."* His father had passed the class three and his mother is a housewife who is illiterate.

The interesting subject of Respondent "D" is Nepali. His hobby is to play carom board and watching TV. He always used to play carom board and watching TV at home. He is not interested to practice mathematics because he felt mathematics as a difficult subject. He did not understand anything in mathematics.

When researcher observed the class, he was sitting on the wheel chair with discipline. He was sitting near the white board. The teacher behavior was not different between him and other students.

About his study, the mathematics teacher told, *"He always does homework but wrong. He never asked any question in classroom or out of classroom."*

Many students with learning disabilities have weak abstract reasoning skills. This weakness might prevent them from understanding the basic concept of learning mathematics. Students with poor reasoning skill may not be able to understand the

fact presented in word problem and mathematics problem. Their concreteness in thinking can also causes difficulties when they try to convert verbal sentences and mathematical problem. For example, discounted prizes or compounded interest can be especially confusing. Some social and verbal behavioral concern can interfere with success in mathematics. Disabled students with learning disabilities and attention problem can have difficulties completing problem requiring several steps. Sometime every situation has solving a simple problem. These types of problem may cause anxiety and frustration and lead to an in ability to complete practice homework.

According to the school presentation register it seem to be present except special condition. There is no any opportunity provided by school to him. But little scholarship is distributed by the government of Nepal. Therefore, school environment is normal. About the causes of low achievement in mathematics, Respondent "D" told, *“There are so many difficulties in learning mathematics. I have poor background of basic mathematical knowledge. There is poor economic condition, illiterate guardians, friendship of bad society etc.”*

He is poor in mathematics but he obeys the rule and regulation of school. He reaches in school on time with school uniform. He does not have good family environment to study when he returns home from the school. He is busy to watch TV.

Form the above statement it can be concluded that the economic condition of his home is very poor. Negative role of society, bad friendship and poor basic concept of mathematics makes him poor in mathematics.

### **Causes of Low Achievement in Mathematics**

There are so many causes of low achievement in mathematics with the help of related literature, theory, interview with students, their parents, guardians, math teacher, class observation and related documents of school, it was assumed that there

were different causes of low achievement in mathematics of difficult student such variables are described separately as follows:

### **Home Environment**

Home is the first school for each child. The children learn how to behave to other, how to respect the elders, how to cooperate to each other etc. Environment is the totality of the educational atmosphere in home and school. For good learning home environment plays a vital role in learning. Home environment refers the parents' education, occupation, economic condition, workload and motivation by parents at home.

Home environment is affected every life to all individual. For learning mathematics, there is mostly good environment at home.

*“If there were educated people in our family then that would create the good learning environment at home. Parents could not success to manage the physical facilities we need at home and my house is small with not sufficient room.”* [Student]

While analyzing the above-mentioned expert of a parent, it is known that home environment plays traditional belief and primitive thoughts, which was a subject matter of overall development of disabled students. It was due to lack of parent's education that they had taken not formal education. Parents had positive attitude towards disabled student but there is some technical problem. Therefore mathematics teacher indicate who gave disabled students with learning disabilities in their classes face to face challenge, however, a weakness of typical learning disabilities characteristic and use of effective learning strategies can promote to confidence and competence in students in working mathematics.

The above view of student indicated that there are not literate people in their family. Due to this, good learning environment at their home cannot be creating. As



their economic condition is very low, due to this learning environment at their home cannot be created. As their economic condition is very low there cannot provide the physical facilities at home.

*“I think this education would not play vital role in individuals learning. I expect my son could do some occupation as soon as possible by leaving school. It would far better if he joined any job.”* [Parent]

In parents' view, going to school is only to spend time, instead of that; they can join other occupation to earn some money to help the family.

*“we provide the report cards of students' achievement for parents. If the students are failed mathematics or have low performance, then we invite to the parents at school but the parents of disabled students do not respond about it.”* [Head Teacher]

According to head teacher's view if the students are failed in mathematics or have low achievement, they just call their parents and suggest giving extra class or tuition but the parents do not respond.

From the above view, it indicates that the economic status of family influences to the achievements of the students. The high economic status can get better chance to buy books, copies and to take tuition and other activities. Mathematics needs more labor and the effort than other. Disabled had not obtained such facilities at home. Most of the parents of disabled students are illiterate. Any motivation given to their children at home.

### **School Environment**

School environment is the totality of the educational atmosphere. School is the second home of every child. The teacher, students and parents are the component of the school. School environment reflects belief and tradition of the school community delineating the relation among parents, students and teachers. Scholarship to students,

dominance of the other normal students, extra class provided, physical facilities, teacher and peer behavior are the major aspects of the school environment.

Disabled students are not economically strong which they cannot afford their study easily. There is difference between home culture and school culture. So their school culture and home culture cannot be matched each other due to which they feel themselves as inferiority complex to other students. So, disabled students are weak in mathematics learning. Although, they are not provided with extra class activities their learning is also hampered by the disabled problem. Therefore, they are poor in mathematics.

*“Most of the parents leave the whole responsibility to their children to the school.”*

[Head Teacher]

In observation, it was found that there are not provision extra class. At home, local language was using which made difficulties to understand other culture language at school for disabled students. Parents' education and their support children, teacher qualification, scholarship and other helpful methods are useful for successes students.

Then no scholarships are awareness no extra classes for disabled students and difference in language between collage and home greatly affects the learning environment that the family caused in low achievement of disabilities students in mathematics. The above view of math teacher and head teacher indicate that the parents of disabled students don't care their child at home. They don't help to do homework and don't careful about their future.

*“I used learner centered method as well as explaining the problem step by step in the white board but disabled students cannot understand my method.”*

[Teacher]

In teachers view his teaching method is child centered. However, due to the poor mathematical background they are unable to understand the lesson.

*“We are feeling uneasy to sit in the classroom. We have wheel chair, baishakhi etc. but the classroom is small. It is very difficult to move here and there.”* [Students]

The above view of students indicates that there is not sufficient space to sit in relax way. There is small classroom but the numbers of students are more. It means that there are not sufficient physical facilities in school.

*“Sometimes, when we come to school then other students say, "Apang Aayo" so we full dominate school.”* [Students]

This view indicates that the dominating character of other students compel them either to leave school or to make them irregular.

*“The school has few teaching materials for teaching mathematics but the future plan of the school is available and to manage required material's* [Head Teacher]

The above view of head teacher indicates that there are not sufficient teaching materials for teaching mathematics.

From the above responses the researcher concluded that the school has lack of physical facilities e.g. room, bench, desk etc., peer behavior is not so good towards the disabled students and educational environment is not in favor.

### **Teaching Learning Process**

Teaching learning process is main factor in learning mathematics. Teacher education, experiences and expertise determine the teacher qualification. Mathematics is practical subject. It can be solved by different process in mathematics. The way, the teacher directly effects on the mathematics learning, students' teacher behavior, teaching method, application of the subject of teaching learning method are form of teaching learning process. All students with disabled expect that teacher use more

methods for teaching.

Teachers usually treat all the students equally. We found that they don't treat extra ordinary to the disabled students and they do not use another methods and teaching material, due to disabled because much hard subject to the other subject.

*“Teacher always emphasis their own method and they also choose the lesson according to their will, school always emphasis on bookies knowledge in mathematics classroom.”* [Student]

The above view shows that for selecting of teaching method always dominate the students. Nevertheless, the modern views of learning emphasis more collaborative and cooperative methods for teaching learning mathematics.

*“Lack of so much teaching materials is unable to use material and technique in the classroom and classroom is so much crowded.”* [Teacher]

The teacher view indicates that the large numbers of students sit together in class and students feel difficulty for learning and teacher cannot use sufficient teaching methods and materials.

Interest of learner influences the learning strategy and achievement strategy and achievement of students. When man is being growth and develops, the area of interests is being increasing. Interest depend upon the individual some are interested in game, some are in music, arts etc. The experienced teacher can his students understood. The student can understand the problem solving if the teacher uses the tricky method. A trained teacher can attract the students towards the mathematics on the base of different teaching skills on teaching learning process. A trained teacher can use rightly and appropriately the teaching material and makes the teaching learning easy and interesting. Mathematics is practical, so the use of teaching material is necessary in the study of this subject.

However, if appropriate method is not used then the teaching learning process cannot be effective in mathematics teaching. From the above responses, the researcher concluded that, the schools have lack of teaching materials; untrained teachers, lack of proper teaching learning methods etc. are the main problems in teaching learning process.

Finally, students have positive and negative habit in mathematics learning. When mathematics was thought by manners that connect to that learning strength, they are better able to not only access the mathematical content but also their vision of mathematics. Disabled student frequently discussed learning style with in the classroom. Teachers have been teaching long time and know that what they are teaching all ready. Disabled students felt that teachers should take the time to lesson that directly addressed student for teachers learning process. As a student has described learning process that fit their need, they described about the knowledge of disabled students. They additionally shared stories where they felt unsuccessful in mathematics teachers some their worst experience in mathematics. The result was insight into how the interaction with pair peers, positive and negative, have an impact students academic concept.

### **Culture and Society**

Culture believes as an art, way of life and social organization of a particular country or groups each culture. Culture is a base of human civilization, which shapes the psyche of the individual and the society. Disabled children use friendly language with their teacher, friends as well as in society and they want to close with them but they did not like their friendly behavior. So the relation between disabled students, teacher, society is not good. When the researcher observes the classroom and the parents of disables students, he found that the behavior society is differ than the other

children. They thought that the disabled children could not do anything, they cannot learn and they cannot better his or her life. This type of thought is presented in those societies so the parents of disabled students thought that they are only a problem for us, they cannot do better in their life.

*“He is disabled he cannot do better in his or her life so, it is only a problem to send him/her at school”* [Parents]

From the above statement parents or guardians of disabled students thought that to take him/her to school is worth less, only a problem for to take school and to take home. They cannot do better in his or her life.

The researcher found in grade X that there is cultural misunderstanding between disabled students and normal students and teachers also. They feel dominated in classroom so they can't ask any questions to the teachers as well as friends. Disabled students are sitting alone in the classroom. They are only looking at the whiteboard but nothing understand.

*“I think illiterate guardians' psyche-social background, cultural environment, students' poverty and lack of basic knowledge are the main causes of the low achievement of disabled students.”* [Teacher]

Finally, the researcher found that, the disabled students had low achievement in learning because of their social beliefs, school culture, and social tradition. This is a qualitative inquiry and information gathering process in the form of a case study. A fundamental assumption of the qualitative study about disabled students, for this study, the researcher selected a school from the same condition of school. The researcher himself was literate and illiterate in sign language and asked for the deep information collection with mathematics teachers. Between the analysis and comparison of disabled students is having different techniques and understanding the mathematical

problem. Main problem of mathematics is not understood to disabled students explanations situation and convert into the mathematical language.

Thus , researcher conclude that the connection disabled students make have reflects the idea that learning is social process shaped by external forces where knowledge is formed and internal with other and the environment student express their difficulties of not only mathematical content but it was also due to teaching strategy , supporting environment in classroom and also at home.

## **Chapter V**

### **SUMMARY, EDUCATIONAL IMPLICATION CONCLUSION AND**

This chapter is concentrated in deriving some findings from the discussion of chapter IV. Besides finding and conclusions, it has some educational implications, which are also discussed based on overall study of the disabled children. Disabled student faced different difficulties such as discrimination towards disabled students, interpersonal relation, irregularities, teaching learning process, school environment and home environment. All people see them with different views. Disabled students feel uneasy everywhere because they tried to ensure the discrimination done by the normal students, family members, teacher and so forth. This framework also shows that how disabled students are discriminate by people. Discontinuity is significant problem of them because they can't reach or go to school due to their disability. Parents view is also problem for being discontinuity as well as irregularity.

Learning environment at home and school is not appropriate of the disabled students. However, they became irregular in the class and sometimes leave the class school too. The teacher teaches them by using his teaching techniques. The teacher does not teach them by understanding the interest of disabled students. Teacher should pay attention about the interest of students while teaching them in the classroom. Teaching techniques used by the teacher is also one of the problems of disabled student, which they cannot understand easily. They feel difficulty in learning mathematics problems. Described above are the problem faced by the disabled students.

### **Summary and Findings**

Mathematics is a language that is a basic tool of communications so mathematics is essential for understanding and interpreting of every discipline. Now



every human discipline such as chemistry, physics, social science, economics, psychology, engineering etc. are interpreted as a mathematical model. Without having mathematical knowledge, it is difficult to understand those disciplines mathematical techniques are essential tool for the development of every field of knowledge. Either it is science or technology, social studies, economics, management etc. They need mathematics for advance study. The twenty first centaury is said to be that of computer based information technology and it is all based on mathematics.

This is case study related to causes of low achievement of disabled students in mathematics at class X in Kathmandu district. The objectives of this study were to analyze the causes of low achievement of disabled students in mathematics and to explore the learning environment provided to disabled students. The design of this research is case study in which meanings were derived from total study, logical and reasoning of why and how it was like that, linking with theories. The case study of this sampled school children was carried out though participant observation and interview.

For this case study, one girls and three boys taken as purposively, who were studying in grade X, Vygotsky's theory on social constructionist view on disability were used and from this case study of causes of low achievement of disabled students in mathematics following are the major findings:

- ❖ The mathematics teacher behaviors are not different for disabled students.
- ❖ Researcher founds as normal, but math teacher is not motivated the disabled student in mathematics class.
- ❖ There is discrimination, discontinuity at home, and school.
- ❖ There is not proper interaction between disabled parent and school.
- ❖ The financial condition of disabled student is not strong enough to take extra

classes as well as tuition classes.

- ❖ The physical aspect of school was not satisfactory there is not sufficient teaching learning materials, library, class room etc.
- ❖ The home and school environment is not suitable for the mathematics learning of disabled students.
- ❖ The home related variable such as parents education poverty, gender as, behavior of parents are the major aspects of causes of low achievement in mathematics of disabled students.
- ❖ By the economic condition and lack of clear concept about education of their parents, they (disabled students) are irregular in the school.
- ❖ There is no lesson planning of mathematics teacher daily and use of teaching materials in classroom was rare.
- ❖ Poor mathematical background of disabled students.
- ❖ Extra classes are not conducted.

### **Educational Implication**

In describing his congruence model of change stresses the importance of not only knowing what is happening in an organization such as school but also what changes have already happened with this perspective about disabled students to the overall students of school are better understood and interventions can be put the place for effectiveness, the greater, effectiveness. The identification of mathematics as a unique subject and a subject different from other supports the need for math and see value in a subject. Students have set goals for high levels of students achievement and place is a great significance on getting good grades and despite previous negative experience with mathematics there is a potential to reshape the negative concept of disabled students. As students steps into the mathematics classroom with negativity

towards mathematics, this study suggests that there is hope in changing this study suggest that there is hope in changing their mathematical concept to which inhibit positivity.

If improvements are expected in disabled students in low achievements, mathematics interventions should extend beyond math skills alone. Essential to positive growth in the math concept of disabled students is the implementation of teacher and classroom intervention the support students' positive attitude of ability in math. It is the classroom learning environment that contributes to important students outcomes such as disabled students attitude and the creation of the stage-environment fit for disabled students.

The challenge has been determining the right interventions to develop a proper stage. Environment fit for disabled students. Decrease in mathematical achievement, attitude and concept during the transition to the disabled students. Researcher has also show that the gender, age, race and socio-economics status the development of disabled students. This study, however, takes into consideration the perception of the disabled students in term of the intervention students seem supportive in the development of disabled students attitude as a positive in math. Practical implication are suggested for classroom and teacher that ask strategies to look beyond prior achievement and to reflect on the stage-environment fit for disabled students.

The participants of this study suggest that classroom and teacher interventions supporting the affective domain of their learning of disabled students. With the suggestion posed by student, researcher can assume that the implementation of such practice in the math classroom will have positive impact on disabled students attitude in mathematics. As proposed by the finding of this study, the development of the

positive attitude does not guarantee a positive mathematical concept. The intervention by the participants may not everything fall neatly into place, but it is the responsibility of teachers and stakeholders to implement at least one or more changes to fill the gaps in students education.

### **Conclusion**

Regarding this conclusion, the researcher derived from his fieldwork in Khagendra New Life Special Education Secondary School, Jorpati and Kathmandu, Nepal. Disabled students are almost absence in class. Moreover, according to the mathematics teacher, disabled students are poor than other students in learning mathematics. From the study, the researcher draws the following conclusion:

The culture plays vital role in mathematics learning. Due to unmatched culture at home and school, that rise the difficulties in mathematics learning. Their economic status is not enough to carry their future 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.

The learning environment plays vital role in better performance in learning mathematics. Due to the lack of proper environment at home and school, that creates the difficulties in learning mathematics. The inadequate use of instructional materials in the class and no proper use of child psychology by the mathematics teacher is one of the causes of low achievement of disabled students in mathematics.

To upgrade economic condition, government should employ their parents. To create learning environment at home, awareness their parents by organizing some programs and to provide the training to the math teacher and to provide the extra class in school specially focused to disabled student. Most of the people have felt that the disabled students have negative idea about mathematics but this case study research

revealed that they did have good vision of the mathematical concepts. Due to some limitation, they have feeling difficulties especially in mathematical area. If we really encourage them with suitable strategy then they can overcome such problem and could be a good thing of mathematics learning.

### **Recommendations for the Further Study**

Parents of disabled students do not take much interest in how their children are learning. They should be aware to enhance the education to their children. To rise mathematics achievement of disabled student different awareness and opportunity should be made available. There are limitations of this research. However, after analyzing, conclusion and implication of the study the researcher has made the following recommendation for further study to validate the present study's findings:

- ❖ This study is done with in limitation and in particular area the broad and general study may be done for overall disabled students.
- ❖ A similar study can be done for preprimary, primary and lower secondary level and other subjects also.
- ❖ A study can be done on the causes of school dropout problem of disabled students.
- ❖ Similar study can be carried out in private school

Peer supports interest of learners and home environment hope played vital role in how mathematics achievements other study would extent that how can the causing factors so minimize. Since, it was found that the mathematics achievements of disabled students are more affected by interest of learners, self- confidence, participations of learns, interaction between teachers and students and familiarity of school environment so it is suggested that improve the above variables in teaching learning process.

## References

- Adhikari, H. (2010). *Problem faced by blind students in learning geometry at secondary level*. Unpublished Master's Thesis, Department of Mathematics Education T.U., Kathmandu Nepal.
- Adhikari, K. (2006). *Teachers attitude towards the integration of hard of hearing deaf students in mathematics in general school*. Unpublished Master's Thesis, Faculty of Education Tahachal, Kathmandu Nepal.
- CBS, (2011). *Population census report*, Kathmandu Nepal.
- Eraikhueman, L. (2009). *The influence of gender and a school location on students' academic achievement in senior secondary school mathematics*. Life journal of theory and research in education 7(2), 99-112.
- Ghimire, D. (2005). *Difficulty in learning algebra: A case study of blind students at secondary level*. Unpublished Master's Thesis, Department of Mathematics Education
- Gindis, B. (2003). Remediation through education; sociocultural theory and children with special needs. In; Kozulin et al. (Eds.). *Vygotskys educational theory in cultural context*.(Cambridge University press), 200-225.
- Goff, S.B & Futterman, R. (1982). Sex differences in mathematics achievement towards the model of academic choices, *psychological bulletin*, 91-324-384.
- Holt, R. (1964). *How children fail*. Sage Publication. New York.
- Khanal P. (2015), *Research methodology in education*, Kathmandu: Sunlight Publication Nayabazar, Kirtipur.
- Leontiev, A.N. (1978). *Activity, consciousness and personality*. Englewood

Cliffs, NJ; Prentice-Hall.

Louie, J. (2008). *Math education practices for students with disabilities and other struggling learners: Case study of six schools in two northeast and islands region states. American journal of education*, REL 2008-No.053. Washington DC: US department of education.

Luitel, S. (2007). *Difficulties areas in arithmetic for grade VIII deaf students*. Unpublished Master's Thesis, Department of Mathematics Education T.U., Kathmandu Nepal.

Paudel, S. (2002). *The Instructional problems in blind schools of Nepal*. Unpublished Master's Thesis, Faculty of education Tahachal, Kathmandu Nepal.

Sharma, C. (2007), Problem in learning mathematics of the blind students at the secondary level (A case study). Unpublished Master's Thesis, Department of Mathematics Education T.U., Kathmandu Nepal. T. U., Kathmandu Nepal.

Vygotsky, L. (1929). *The cultural development of the child*. Journal of genetic psychology 36, 415-434. (Original work published in 1928, Pedology, No.1.,58-77).

Vygotsky, L. (1931/1993). The collective as factor in the development of the abnormal child in; Vygotsky 1993, 191-209.

Vygotsky, L. (1978). *Vygotskys social constructionist views on disability*. Vygotsky educational theory on disability, University of Oslo P. O. Box 1140 blindern, No.- 0318 Oslo, Norway.

Vygotsky, L. (1993). The collected works of L.S. Vygotsky. Vol.2; The fundamentals of dialectology (Abnormal Psychology and learning

disability), (R.W. Rieber and A.S Carton, Eds). NY1; Plenum press.

Vygotsky, L.S.(1978). *Mind in society: the development of higher psychological process*. Wales, Vermont.

Yadav, G.K (2014). *Mathematics learning problems of disabled students*.

Unpublished Master's Thesis, Department of Mathematics T.U.,

Kathmandu Nepal.



## **Appendix A**

### **In depth Interview Guidelines with students**

Name of the student:

Date:

Roll No:

Age:

Sex:

Place of Residence:

Place of birth:

The interview in the disabled students will be taken on the basis of following main topics.

- a. Family background
- b. Personal history
- c. Teacher behavior towards them
- d. Reading opportunity at home
- e. Teaching method
- f. Views about mathematics and mathematics teacher
- g. Causes of difficulties in learning mathematics
- h. Regularity in school
- i. Homework and classwork
- j. Teachers response with them
- k. Relation between disabled students and other students
- l. Expectation about mathematics learning
- m. Causes of low achievement in mathematics
- n. Views about culture
- o. Encouragement provided to them

## **Appendix B**

### **Interview guideline with mathematics teacher**

Name of teacher:

Date of interview:

Religion:

Age:

Qualification:

Sex:

Experience:

The interview schedule with teachers were taken on the basis of following main topics:

- a. Teaching strategies
- b. Problem on teaching disabled students
- c. School facilities
- d. Impact of culture differences in learning mathematics
- e. Encouragement provided to the students
- f. Teaching method
- g. Interest of disabled students in mathematics learning
- h. Views towards low achieved students
- i. Application of homework and classwork
- j. Extra class for low achievers
- k. Use of lesson plan
- l. Relationship between teacher and disabled students
- m. Interest of parents about achievement of disabled students
- n. Use of instructional materials
- o. Need for extra treatment for disabled students

## **Appendix C**

### **Guideline for interview with Head Teacher**

Name:

Date:

Sex:

Age:

Experience of head teacher:

Major subject: The interview with head teacher was taken on the

basis of following main topics:

- a. Learning environment in school
- b. Relationship staff and students
- c. Guidance for mathematics teachers
- d. Policies for low achieved students
- e. Relationship with guardians
- f. Roll of school management committee
- g. Views towards mathematics achievement
- h. Classroom management
- i. Causes of low achievement of disable students
- j. Differential things for disabled students at school

## **Appendix D**

### **Interview Guideline with Parents**

Name:	Date of Interview:
Address:	Age:
Religion:	Occupation:
Sex:	Ward No:
VDC/Municipality:	Family Size:
Name of his/her child:	

The interview with parent's guardians will be taken on the basis of following topics:

- a. Parents behavior toward child at home
- b. Main interesting area of child at home
- c. Environment at home for learning
- d. Views about cost of education
- e. Physical facilities for learning
- f. Economic status
- g. Watching television
- h. Views about the improvement of their children achievement
- i. Parents views about economic help from NGO's, INGO's and Government
- j. Expectation from school

## **Appendix E**

### **Class Observation Note**

Name of the school:

Grade:

Address:

Time:

Name of Teacher:

Period:

Subject:

Section:

Topic:

#### **Key Points**

##### **Initiation of Lesson**

1. Teacher personality
2. Self-confidence of teacher
3. Introducing the objectives of the lesson
4. Interestingly class started
5. Based on previous lesson
6. Class arrangement

##### **Presentation and developing of the lesson**

1. Stimulating recall of prerequisites
2. Presenting the content with its distinctive
3. Features and learning guidance
4. Providing suitable example and learning guidance
5. Encouraging for sharing and small group discussion
6. Appropriate of question answer between
7. Students and teacher
8. Teacher and students interaction for
9. Eliciting the performance