

Chapter-I

INTRODUCTION

Background of the Study

A student who is unable to his parts of body completely, partially because of certain physical conditions such as illness, injury etc and unable to learn easily is called disabled students. In other word, the students who are mentally and physically disabled to learn easily can also be categorized students. In my study the students who was physically disabled that cannot learn easily such as Apang is disabled students. On the other hand, Mathematics which was created with human needs is going ahead with human civilization. Human beings are the most sensible and curious creatures to which mathematics are necessary in every moment of life. Our life will be a dark without mathematics.

The today's world cannot be more and nobody can live without mathematics. People have been utilizing mathematics to solve the difficulties arisen due to natural calamities, political propose, economic development planning and other social events can be perceived from the early history of mathematics of different civilization. Mathematics is taken as the science of all sciences and arts of all arts. It is also known as the queen of science. Goff and Fuwter (1982) state that *“knowledge of mathematics is indispensable to our daily lif, Counting objects, reading and writing numerals, Performing arithmetic calculation as well as reasoning with number of tasks most people perform in their daily life. A strong back ground in mathematics is necessary for almost all technical careers in societies competence in mathematics have been identified as a critical skill directly related to educational and occupational choice.”*

“The number of disabled people is increasing day by day, became of the starvation and malnutrition as well as heredity. The disabled students can't easily like normal students. They need special education with different types of teaching learning materials. Training and trained teachers are required.”

In Nepal, special education for disabled students started with the establishment of blind section in laboratory school Kirtipur in 1964. In 1966 a school for deaf and visually impaired was established by Bal Samshtan, Naxal in Nepal. After this, non-

government school for disabled students, “Khagendra Nawajeevan Kendra” runs under Nepal Apanga Sangha. A special education committee was established for the co-ordination of special education programme and schools for deaf and visually impaired students were expanded in Pokhara, Dharan, Dangadi, Bhairahwa and Surket in 1981. Schools for mentally disabled were also established throughout the country. In 1985, Nepal Susta Shrawan Kalyan Sanstha was established for the welfare of hard of hearing students. In the compound of this Sanstha National centre for communication has been established in the economic support of Denish Federation of Hard of hearing (LBH) for the preparation of teacher manual, teaching materials the management of auditory machines and teacher training. It is already mentioned that mathematics education is necessary to almost all students whether they are normal or disable in their daily life. But some primary level students are also disable because of heredity and several other educations. So, it is now becoming the emerging challenge for the government to manage quality for the disabled students.

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 situation and the nature of the students. Disabled students have also their own needs and desires like 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 students 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 leads them back than normal students. These kinds of behave and behaviors are completely wrong. It is the result for evil work of neither former birth nor the punishment of god. But, it is the result of malnutrition, carelessness of their parents and lack of knowledge.

For more than two thousand years a familiarity with mathematics has been regarded as an indispensable part of the intellectual equipment of every cultured person. Today, unfortunately, the traditional place of mathematics in education is in danger. The teaching and learning of mathematics has degenerated into the realm of rote memorization. The outcome of which leads to satisfactory formal ability but does not lead to real understanding or to grater intellectual independence. This new edition of Richard Courant’s and Herbert Robbins’s classic work seeks to address this

problem. Its goal is to meaning back into mathematics. Mathematics is a process of learning and it is an expression of human mind, concerned chiefly with ideas, processes and reasoning. Its basic elements are logic and intuition, analysis and construction generality and individually. It is a way of organizing a logical proof. It can be used to find out where or not an idea is true or at least where it is probably true. As a way of reasoning, it gives us in sight into his power of the human mind and becomes a challenge to intellectual curiosity. It is a language in which we use ideograms and symbols, instead of words. So mathematics is an organized structure of knowledge in which each proposition is deduced logically from previously proved propositions or assumptions and its comparison skill, techniques and arts by which man conveys ideas concepts of facts.

But the Evolution of mathematics might be seen to be an ever-increasing series of abstractions, or alternatively an expansion of subject matter. The first abstraction was probably that of numbers. The realization that two apples and two oranges have something in common was a breakthrough in human thought. In addition to recognizing how to count Physical object, prehistoric peoples also recognizing how to count abstract quantities, like time-days, seasons, years. Arithmetic (addition, subtraction, multiplication and division), naturally followed. Monolithic monuments testify to knowledge of geometry.

From the beginnings of recorded history, the major disciplines within mathematics arose out of the need to do calculations relating to taxation and commerce, to understand the relationship among numbers, to measure land and to predict astronomical events. These needs can be roughly related to the broad subdivision of mathematics, into the studies of quantity, structure, space and change.

As noted above, the major disciplines within mathematics first arose out of the need to do calculations to understand the relationships between numbers, to measure land, and to predict astronomical events. These four needs can be roughly related to the broad subdivision of mathematics into the study of quantity, structure, space and change (i.e., arithmetic, algebra, geometry, and analysis). In addition to these main concerns, there also subdivisions dedicated to exploring links from the heart of mathematics to other fields: to logic to set theory (foundations), to the empirical mathematics of the various sciences (applied mathematics), and more recently to the rigorous study of uncertainty.

The main purpose of the teaching of mathematics is to develop the understanding reasoning and analyzing powers which are necessary to various aspects of human civilization and development. So far the formal teaching of mathematics in Nepal is concerned. It has been started with the establishment of Durbar High School in 1853 A.D. during the Rana regime. With the advent of National Education System Plan (1971-76) mathematics was given special emphasis at each level of schooling. This is clear from the fact the 30%, 20% and 12% of school hours are given to mathematics at primary, lower secondary and secondary level respectively. This fact clearly indicates that understanding of mathematics has been accepted as fundamental component of literacy. Mathematics learning helps student understands and interprets the important quantities of qualitative aspects of living. Mathematics, is the backbone for daily life, studied in the field of science of technology the implementation of NESP (1971) at all level of school education. Mathematics as the subject has been given a significant place brought a very essential change in mathematics education in Nepal. The NESP mathematics curriculum states the importance of mathematics as follows.

The history of mathematics education is not so ancient. From ending of the 1st and 2nd World War, most of the military came to the teaching field. In 1930 A.D. America conducted the seminar to know about the condition of the process of mathematics teaching. Formally the existence of mathematics education was established in 1969 from the International conference of mathematics education conducted in 1972 in England. Then it was conducted in 4 years duration.

While tracing out the history of mathematics teaching in the context of Nepal we should not forget the mathematics is the form of 'Astronomy' or Astrology' known as Jyotish' and 'Siddhanta' Ganit Jyotish taught in Sanskrit education. Actually, the formal education of Nepal was started from Durbar School in 1910 Ashwin 27 established by Janga Bdr. Rana. This school was opened especially for Royal family firstly. At that time, Basic 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 Sangha, Sansthan etc which works for the disabled students for their bright future. The main purpose of these institute or Sangha is to provide the education for these who are mentally, physically or socially disabled. Bal Sansthan, Khagendra Nawajeevan Kendra' were established for education of disabled child. Nepal Government also provides different facilities for disabled child for their informal education as well as formal education. It doesn't merely provide such facilities but also provides foods, wheel chair 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.

Statement of the Problem

The study was concerned with the conventional classroom teaching approach of the problem of disabled students in learning mathematics. The general class of school is not sufficient for the disabled and they need extra classes and alternative materials and methods.

Generally, many people feel that the disabled students are unable to learn mathematics than the normal student. Also, it is more difficult to find disabled students study mathematics in higher level. Comparatively the achievement of disabled students are very low in mathematics than the normal students. Therefore, there arise different questions related to mathematics and disabled students, such as do they feel difficult in mathematics because of their disabilities. In which areas of mathematics such as arithmetic's algebra and geometry, they feel more problems? Why? A huge mass of such questions a researcher cannot include all things at once so the researcher only concern on difficult on algebra. In this study the researcher wants to find, where the disabled students feel more difficulty, such as content, using material, teaching learning strategies, class room practices. Therefore, the study is proposed to seek the answer to the following research questions.

1. What are the areas of difficulties of disabled students in learning Mathematics?
2. Why do the disabled students feel more difficulty in mathematics?
3. What are the problems faced by disabled students at primary level in mathematics' learning?

Significance of the Study

Mathematics is an important part of every life. Especially, it is essential for school curriculum. So, every pupil studies it and gains better achievement. The NESP curriculum (1971) states the importance of mathematics in the following words; *mathematics' language is like a basic tool of communication*. Daily transaction and communication involve the frequent use of mathematics concepts, thus it is quite natural than mathematics language in school education. It also says that a well grounded understanding of mathematics is an essential for everyday life as for higher study in the fields of science students. Grounded understanding of mathematics determine how and in what aspect they could contribute to the welfare of the community and for the development of the nation. In community further mathematics learning helps the students understanding and interprets several important aspects of living. The significance of this study can be summarized in the following points.

- It would be helpful for the school mathematics teachers to evaluate the problems of their disabled students.
- It would be helpful for the betterment of the new curriculum.
- It would be beneficial to improve the mathematics

Objectives of the Study

The following were the objectives of this study

1. To find the areas of difficulties in learning mathematics of disabled students.
2. To find the causes of difficulties of disabled students in learning mathematics.

Delimitation of the Study

The limitation of this case study is given below:

- I. This study was related to learning problems of disabled students in Sarlahi district.
- II. This study was limited to only one primary school.
- III. This study was done only the disabled students of grade IV and V.
- IV. This study included only the government school of Sarlahi district.
- V. The case school was taken with accordance of researcher convenience.

Definition of Related Terms

) The term 'Disabled' refers to the opposite of the 'able'. Generally speaking, 'Disabled students' are these students who can't be able to work easily due to any problems such as hands, legs, eyes, ears and so forth. While defining the term 'disabled students' in broader sense, the one who are physically, mentally & socially too weak. They can't be able to work easily like healthy or normal students. Disabled students are of many types: Someone are physically handicapped, some are mentally, & some socially. In short, 'Disabled' also refers to the persons having without abled such as Apang. In other way, 'Disabled' is also known as Apang. 'Apang' is the Nepalese term of 'Disabled'.

In this study disabled students means the students having eye defect, leg defect and hand defect. Out of four disabled students, two from the same village named Jamuniya, one from Madanpur, and one from Binagara. They would have to face many difficulties when they go to school. Two students having disabled with legs, one with hands and one with eyes. These are the difficulties of 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 and hated by their per good and the other one problem is that they can't take participate in mathematical race too.

the student having disabled with hands are also psychologically discouraged and hated by peer group and one of the major problem faced by him is that he cannot do. Class work exercise like drawing venn-diagram geometrical figures and other too and the students having disabled with one eyes faces the problem of eye-sight in learning venn-diagram, geometrical figures and problems solved on the blackboard.

Chapter-II

REVIEW OF THE RELATED LITERATURE

This study is about review of related literature and framework for the study. Theoretical literature describes learning theories in mathematics. Which is helping to construct the framework to achieve the objectives of this study. This chapter also deals with the review of other related literature about facing problems concerning with curriculum, activities, observation and disabled students characteristics etc.

Review of related literature is called a deep insight and clear prospective of the overall field. The main purpose of review of related literature is to find out what works have been done in the area of the research problem under study and what has been done in the field of the research study being under taken.

A study conducted by Furth (1964) has reported that disabled and normal students have equal intellectual ability which is the first investigation. Furth tested children on their ability to compare the concept of symmetry, sameness and opposites. He also found hearing impaired and concluded that the cognitive abilities of deaf children are essentially unpaired expected in those case in which the particular concept is very dependent upon language experience. He believes that the occurrence of language dependent concept is low enough that overall cognitive development need not be retarded in deaf children. In addition further stress that deaf children perform worse than normal intellectual test. It may be because they have not received attribute parental stimulation of educational instruction.

CERID, (1993) a study report came up with the *finding of verbal problems, algebra and geometry were difficulty areas of learning for the disabled students*. Language of the student was too poor to comprehend the language use in the text book as well as their teaching technique was almost traditional without the objective to identify the basic learning need of primary school children of disadvantage and unprivileged population groups specially those rural & remote areas, in the context of Nepal. Science, mathematics and social studies and to desire illustrative samples of teaching learning modules in private school. The researcher would like to appreciate the facts and findings proposed by CERID.

According to Wagle (1995) “Review of related literature is an integral part of the conduct of research, helping the research in the clarification of his problem and the avoidance of duplication, the formulation of insightful hypothesis, the planning is an adequate research design and the rigorous and insightful interpretation of his/her findings.”

This chapter has focused on the review of the related literature relevant to the purpose and question addressed in this study.

Adhikari (1999) made a study on teaching attitude towards the integration on hard of handicapped students on mathematics in general schools. This study included 42 teachers of general schools with resources 15 classes of deaf school from Jhapa, Morang, Sunsari Ilam, Udaypur and Dhankuta and concluded that there is significant different 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 favourable attitude than the special school teacher.

The national longitudinal study found that the achievement of scores of black people in mathematics was lower than that of Asian. American was higher than that of white students.

Hanich, (2001) A study on article “*performance across different areas of mathematical cognition in children with learning difficulties*” performance of 2001, 2nd grader in different areas of mathematical cognition was examined. Children were divided into 4 achievement groups. Although children with difficulties in mathematics performed across worse than normally achieving groups in most of areas of mathematical cognition which show an advantage over the group with difficulty in both mathematics and reading.

Ghimire, (2005) did a case study on “*Difficulties on Learning Algebra.*” The objectives of the study were to identify the difficulties on content of algebra and to identify the difficulties on classroom practices. This study was conducted with the sample size of four blind students. The students were selected by random sample process. Different tools such: observation, interview and written test were applied to identify their learning difficulties on algebra. A study found that the blind students had able to only add, subtract, multiply of simple very short algebraic terms but unable to divide and they have the limited knowledge about the factorization, HCF &

LCM. They were only recognized the equation but cannot solve it and the coordinate geometry was out of their capacity. The major difficulties of the blind students were found such as:

- i. To develop clear concept on subject matter.
- ii. To write algebraic concept.
- iii. To solve process of mathematical problem in Brail script.
- iv. To adjust in integrated class in learning mathematics and
- v. To use material and methods in mathematical learning.

Luitel, (2005) did a study on “Difficulties Area in Arithmetic’s for Grade VIII Deaf student”. The objectives of the study were, to identify the difficulties in arithmetic and to locate the difficulty area as to relate them to their case. The students were chosen sample by random sampling process, observation and interview were used to identify the learning difficulties. This study concluded that deaf student’s had the fundamental knowledge of mathematics but in academic course they were feeling difficulty in learning mathematics (arithmetic) 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 mathematical word, 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 & motivation, social interaction and their place in the family and society etc.

In this review we found the researches along with findings of the people, like Furth (1964), CERID (1993) , Wagle (1995), Adhikari (1999), Hanich (2001), Ghimire (2005), and Luitel (2005). They all have reported the problems almost same regarding learning of different topics of mathematics of disabled or handicapped generally i.e. They are not able as normal students are. Specially talking, Deaf students have the problems of hearing so that what normal students can easily hear and get from explanation of their teachers. The students with hearing problem cannot get from their teachers. Likewise, the students with visual problems cannot get the problems solved on the board in the class with normal students easily get.

Theoretical Literature

A major theme in the theoretical framework of Bruner is that learning is an active process in which learners construct new ideas or concepts based upon their current/past knowledge. The learner selects and transforms information, constructs hypotheses, and makes decisions, relying on a cognitive structure to do so. Cognitive structure (i.e. scheme, mental models) provides meaning and organization to experiences and allows the individual to “go beyond the information given.”

As far as instruction is concerned, the instructor should try and encourage students to discover principles by themselves. The instructor and student should engage in an active dialogue (i.e., Socratic learning). The task of the instructor is to translate information to be learned into a format appropriate to the learner’s current state of understanding. Curriculum should be organized in a spiral manner so that the student continually builds upon what they have already learned.

Bruner (1966) states that a theory of instruction should address four major aspects:

- (1) Predisposition towards learning,
- (2) The ways in which a body of knowledge can be structured so that it can be most readily grasped by the learner,
- (3) The most effective sequences in which to present material, and
- (4) The nature and pacing of rewards and punishments. Good methods for structuring knowledge should result simplifying, generating new propositions, and increasing the manipulation of information.

In his more recent work, Bruner (1986, 1990, 1996) has expanded his theoretical framework to encompass the social and cultural aspects of learning as well as the practice of law.

(http://carbon.cudenver.edu/~mryder/itc_data/constructivism.html.)

Bruner describes the general learning process in the following manner. First the child finds in his manipulation of the materials regularities that correspond with intuitive regularities it has already come to understand. According to Bruner the child finds some sort of match between what it is doing in the outside world and some models or templates that it has already grasped intellectually. For Bruner it is seldom

something outside the learner that is discovered. Instead, the discovery involves an internal reorganization of previously known ideas in order to establish a better fit between those ideas and regularities of an encounter to which the learner has had to accommodate.

His approach was characterized by three stages which he calls enactive, iconic and symbolic. They are solidly based on the developmental psychology of Jean Piaget. The first, the enactive level, is where the child manipulates materials directly. Then he proceeds to the iconic level, where he deals with mental images of objects but does not manipulate them directly. At last, he moves to the symbolic level, where he is strictly manipulating symbols and no longer mental images or objects. The optimum learning process should according to Bruner go through these stages.

1. Enactive mode: while dealing with the enactive mode, one is using some known aspects of reality without using words or imagination. Therefore, it involves representing the past events through making motor responses. It involves mainly in knowing how to do something; it involves series of actions that are right for achieving some result e.g. driving a car, skiing, tying a knot.
2. Iconic Mode: This mode deals with the internal imagery, where the knowledge is characterized by a set of images that stand for the concept. The iconic representation depends on visual or other sensory association and principally defined by perceptual organization and techniques for economically transforming perceptions into meaning for the individual.
3. Symbolic mode: Through life one is always adding to the resources to the symbolic mode of representation of thought. This representation is based upon an abstract, discretionary and flexible thought. It allows one to deal with what might be and what might not, and is a major tool in reflective thinking. This mode is illustrative of a person's competence to consider proposition rather than objects, to give ideas a hierarchical structure and to consider alternative possibilities in a combinatorial fashion, (Spencer. K., 1991, p. 185-187).

Scope/Application of Bruner's Theory

Bruner's constructivist theory is a general framework for instruction based upon the study of cognition. Much of the theory is linked to child development research (especially Piaget). The ideas outlined in Bruner (1960) originated from a

conference focused on science and mathematics learning. Bruner illustrated his theory in the context of mathematics and social science programs for young children (See Bruner, 1973). The original development of the framework for reasoning processes is described in Bruner, Good now & Austin (1951). Bruner (1983) focuses on language learning in young children.

Principles

1. Instruction must be concerned with the experiences and contexts that make the student willing and able to learn (readiness).
2. Instruction must be structured so that it can be easily grasped by the student (spiral organization).
3. Instruction should be designed to facilitate extrapolation and or fill in the gaps (going beyond the information given). (<http://J. Bruner.htm>)

Component Display Theory (CDT) classifies learning along two dimensions: content (facts, concepts, procedures, and principles) and performance (remembering, using, and generalities). The theory specifies four primary presentations forms: rules (expository presentation of a generality), examples (expository presentation of instances), recall (inquisitor generality) and practice (inquisitor instance). Secondary presentation forms include: prerequisites, objectives, helps, mnemonics, and feedback.

Table: 2.1

LEVEL OF PERFORMANCE	FIND				
	USE				
	REMEMBER				
		FACT	CONCEPT	PROCEDUR	PRINCIPLE
	TYPES OF CONTENT				

This theory specifies that instruction is more effective to the extent that it contains all necessary primary and secondary forms. Thus, a complete lesson would consist of objectives followed by some combination of rules, examples, recall, practice, feedback, helps and mnemonics appropriate to the subject matter and learning task. Indeed, the theory suggests that for a given objective and learner, there

is a unique combination of presentation forms that results in the most effective learning experience.

Merrill (1983) explains the assumptions about cognition that underlies CDT. While acknowledging a number of different types of memory, Merrill claims that associative and algorithmic memory structures are directly related to the performance components of Remember and Use/Find respectively. Associative memory is a hierarchical network structure; algorithmic memory consists of scheme or rules. The distinction between Use and Find performance in algorithmic memory is the use of existing schema to process input versus creating new schema through reorganization of existing rules. (<http://cito.byuh.edu/merrill>)

The major theme of Vygotsky's theoretical framework in the social Development Theory is that interaction plays a fundamental role in the development of cognition. Vygotsky (1978) states: "Every function in the child'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 (inter psychological). This applies equally to voluntary attention, to logical memory, and to the formation of concepts. All the higher function originates actual relationships between individuals." (p57).

A second aspect of Vygotsky's theory is the idea that the potential for cognitive development depends upon the "Zone of Proximal Development" (ZPD): Vygotsky's theory is complementary to the work of Bandura on social learning and a key component of situated learning_theory. Because Vygotsky's focus was on cognitive development.

One essential tenet in Vygotsky's theory is the notion of the existence of what he called the "Zones of Proximal Development". Zone of Proximal Development is the difference between the child's capacity to solve problems on his own, and his capacity to solve them with assistance. In other words, the actual development level refers to all the function and activities that a child can perform on his own, independently without the help of anyone else. On the other hand, the Zone of Proximal Development includes all the functions and activities that a child or a learner can perform only with the assistance of someone else. The person in this scaffolding process, providing non-intrusive intervention, could be an adult (parent,

teacher, caretaker, language instructor) or another peer who has already mastered that particular function. A difference exists between what child can do on her own and what the child can do with help. Vygotskians call this difference the Zone of Proximal Development.

Vygotsky's Zone of Proximal Development has many implications for those in the educational milieu. One of them is the idea that human learning presupposes a specific social nature and is part of a process by which children grow into the intellectual life of those around them (Vygotsky, 1978). According to Vygotsky (1978), an essential feature of learning is that it awakens a variety of internal developmental processes that are able to operate only when the child in the action of interacting with people in his environment and in cooperation with his peers.

Therefore, when it comes to language learning, the authenticity of the environment and the affinity between its participants are essential elements to make the learner feel part of this environment. These elements are rarely predominant in conventional classrooms.

A classroom that makes the best use of all of its student's ZPDs should follow the following guidelines:

1. The teacher should act as a scaffold, providing the minimum support necessary for a student to succeed. The idea is to assist without denying the student's need to build his or her own foundation. The challenge for the teacher, then, is to find the optimal balance between supporting the student and pushing the student to act independently. To effectively scaffold the student, the teacher should stay one step ahead of the student, always challenging him or her to reach beyond his or her current ability level. However, if instruction falls outside of the zone (above or below a student's ZPD), no growth will occur.
2. To effectively scaffold students within their ZPDs, a teacher should also have an awareness of the different roles students and teachers assume throughout the collaborative process. The roles roughly resemble the following:
 - Teacher modeling behavior for the student
 - Student imitating the teacher's behaviour

- Teacher fading out instruction
 - Student practicing reciprocal teaching (scaffolding others) until the skill is mastered by all students in the classroom.
3. The classroom should be set up in such a way to foster group work and student collaboration in order to allow students to take on the role of instructor with their peers as they master the skills at hand.

The National Board for Professional teaching Standards (NBPTS) had an overt social agenda: to promote an image of teachers as accomplished professionals who reflected on their practice, updated their knowledge, and drew from a variety of sources in making decisions. Central to the image of teacher as professional was the notion of teacher collaboration.

According to policy statements of the NBPTS, accomplished teachers display a “readiness to work collaboratively,” participate in “collaborative efforts to improve the effectiveness of the school,” and “cultivate a critical spirit in appraising...schooling.” 10 Teachers were urged to collaborate on site councils, curriculum revisions, and school and district policy boards. But what about collaborating in gathering and revising the materials that go into a site-based portfolio? This question, of course, returns us to the dilemma raised at the beginning of this article. How do education reformers balance a commitment to teacher collaboration with the need to create assessments that are valid, professionally credible, and acceptable to the public?

Lev Vygotsky pioneered research in learning sciences and made a strong argument for the need for students to demonstrate their knowledge by creating explanations and interpreting their work for others. To Vygotsky, teachers served as mediators who coached and encouraged students to formulate their own level of understanding. Each student has a base level of knowledge, but they can increase it by practicing what they know well and adding onto it. The social interaction between the student, teacher and other students reinforces their increase of knowledge.

An example of what Vygotsky meant is found in the work of Michael Cole and Kenneth Traupmann. 7 These researchers sought to understand children are thinking in the overall context of the school environment as well as within variations they introduced into that environment.

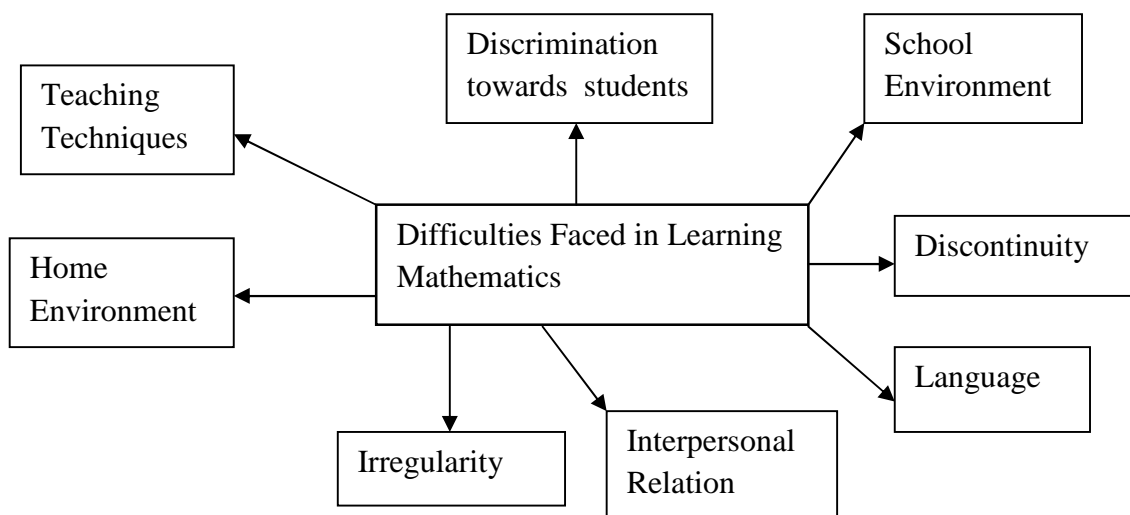
Implications for teaching disabled students

Teachers should provide a more stimulating and interactive classroom that would encourage learners to fuse together prior knowledge and new experiences to problem solve and develop cognitive abilities.

Theoretical Framework of the Study

This case study sought to draw the difficulties in learning mathematics of disabled students. This case study is mainly based upon data analysis & interpretation of the result. The following framework in difficulties in learning mathematics is drawn from the above theoretical review and empirical review of the related literature which was purposed as a theoretical framework of this study.

(Theoretical Framework of the study)



Theoretical framework of the study aforementioned above shows the difficulties faced in learning mathematics for the disabled students only. According to the above tools, Do they (Disabled students) have difficulties or not ? By finding these difficulties, Researcher will find their difficulties later on.

Chapter-III

RESEARCH METHODS AND PROCEDURES

This chapter contains the methods and procedure to be done to achieve the objectives of the study and to get the answer of the statement of the problems. It describes the design of the study, selection of respondents, tools for research, data collection procedure and the method of data analysis and interpretation

Design of the Study

This is the case study about facing problems of disabled students in mathematics learning at primary level. It is qualitative research as well as descriptive in nature.

Selection of Respondents

The respondents of this case study were disabled students, head teacher and mathematics teacher and parents of selected students. The sample units were selected purposively. The sample size of the inquiry depends upon the researcher what he/she wants to know, what the purpose of the enquiry, what was the credibility of the study and what can be done with available time and researcher. Since this study is qualitative research. Four disabled students, three students from grade V and one student from grade IV were selected by purposive sampling techniques. The students were of Madanpur Jamuniya Binagara secondary school Madanpur of Sarlahi district and also one mathematics teacher was selected for interview and the parents of disabled students were selected by the researcher convenience.

Tools for Research

Being a qualitative research there can be used many types tools to get first hand information during the research. Mainly there are methods of data collection in qualitative research.

- i) Interview schedule
- ii) Observation form

The main tools used in this field to gather primary data were Interview Schedule and Observation form. Researcher constructed four interview formats in semi-structured form. Interview schedule (Appendix 'A') was used to know the family

backgrounds of disabled students and to establish the relation between disabled students and mathematics teachers. Interview schedule (Appendix 'B') was used for mathematics teachers to find out the areas and causes of difficulties in learning mathematics of disabled students and to find out the teaching strategies. Interview schedule (Appendix 'C') was used for head teachers to find out physical facilities, learning environment, policy of schools and parental involvement in school. Interview schedule (Appendix 'D') was used for parents to find out the learning environment of home, responsibility for child and involvement in school, and physical facilities for learning. Class Observation Form (Appendix 'E') was used to observe the activities of teachers and students at learning in classroom.

Data Collection Procedure

The researcher would go to each case school with tools to collect the qualitative data. Researcher took class observation of mathematics learning at primary level attaching behaviourally with disabled students.

Carefully recoded each and every notable activities of disabled students in the observation form. Researcher also took interview with Head teacher, mathematics teacher, student and parent of a case students with the help of guidance of semi-structured interview format.

By reviewing the school recorded documents attendance, profile, result sheets, researcher noted punctually, characteristics and behavior respondents. By observing surroundings environment of school, and interviewing with head teacher as well as document analysis of school, learning environment were analyzed.

Data Analysis and Interpretation

The faced problems on mathematics learning of grade IV and grade V by teachers and 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. For this purpose the collected sets of data were coded on the basis of respondents and types of faced problems. On mathematics learning and learning environment of school were categorized by the themes of observed form, the summarized problems mentioned by researcher on observation form and the problems found from interview format. The validity and reliability of this case study was maintained through cross matching or triangulation.

Chapter IV

ANALYSIS AND INTERPRETATION OF DATA

This is a case study related the difficulties faced by disabled students in learning mathematics at primary level of Sarlahi district. The main objectives of this study were to identify the difficulties faced by disabled students in learning mathematics at primary level and to find out the causes of difficulties faced main tools for this study.. Interview schedule of student (Appendix-A), Mathematics teacher(Appendix-B), Interview schedule of head teacher(Appendix-C), Interview schedule of parents(Appendix-D) and Observation form of participation(Appendix-E) in class. The main respondents of this study were focused, children parents, head - master and mathematics teacher of gradeV and IV of the school. Only one school was chosen for this study by randomly.

This chapter deals with the analysis and interpretation of the collected information. At first, data was categorized according the category of the respondents and different themes were given in text view or the observation note. The obtained of the study are presented in terms of the following topic.

-) Discrimination towards disabled students
-) Language
-) Interpersonal relation.
-) Environment at home.
-) Environment at school.
-) Irregularity.
-) Teaching techniques.

These themes were considered as a code and the similar code version of respondents were collected together and explained in their perspectives. 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

Respondent A is 12 year old girls studying at grade 5 she has lived in sarlahi Jamuniya ward - 9. It takes at least twenty minutes to reach school from the house. She had eight members in her family. She had very weak economic condition. To go to school, school, she has felt difficulty to go to school from the house. Due to disabled students without having legs. She became usually absent in her school. She had weak economic condition and her father couldn't get any formal education but he has made agricultural tool. The researcher just talked about learning difficulties in mathematics. Everyday life was one of the components of the discrimination participation observation in the field the researches come to know. Disabled students had silence at home for example she used friendly language in her class. "Sir le bhaneko bujhdaina maile Yo hisab maile janena tai sikaideu". The teacher does not like this language, teacher aspect respective language. Due to her language she could not ask any question to the teacher and she could not understood any problems. She could need this language for her father and mother and other members of her family and other member of the community in her house there was silence culture. This silence culture discouraged to learn in school. They had to used first language used in house and second Nepali language they used in school. Nepali is different from their home language and which were never used in her house. Although the role of modern education system was contributing progressively to betterment the education condition of disabled students.

Respondent B

Respondent B is 13 years old boy studying at grade V. He was born at Madanpur, Sarlahi district. His family has 10 members. The distance between his house and school is about 2 km. He goes to school on foot. He said "I have to sell the things at shop. His father thinks that son is a pillar of father. Son should sell the goods at shops. Study is not important for them in his opinion because of this he said " I have no time due to my house work " I have community, they make almost all every things, they used themselves. Respondents B's work is to sell the things. Without having one hand, he would feel difficulties to go to school due to the lack of one hand because he didn't operate the wheel-chair easily.

Researcher asked him about the educational environment of his house and economic condition. He said "If there were educated people in our family and in our neighbor. They would create the good learning environment at home" and he also said "our economic condition is very poor or weak". In village, there is no educated person as well as at home that he/she would teach mathematics. Researcher couldn't find such type of environment in his house

Respondent C

Respondent C is 14 years old boy studying at grade IV. He lives in Binagara 4. His family has nine members. Student without having one eye, he would have to face many difficulties in learning mathematics problems such as; he can not see well in classroom and he sometimes see weak due to the lack of one eye. Economic condition is very poor. When the researcher observed his house the researcher found it in very weak condition. The researcher asked with his parents about the condition of his life in his house. He has to do work in the morning and evening. So, he has not enough time to do more maths practices at home. Due to his household work, he does not get more time to study at home. He has to get different bad insults from other students. He is very much depressed due to this. He gets different place fully captured by other students. He says that discrimination towards disabled students in prevails more in society than in school. In school, disabled students are discriminated by other students in classroom. In society, children also chide the disabled students. The researcher found that there is discontinuity between every day life and home. Because of this discontinuity disabled environment students felt more difficulty while learning mathematics. In home, when disabled students go to school, they are not allowed to go inside the classroom, don't give chance to the disabled students to play with them. There is also obstacle to treat together with disabled students. There is a big gap between disabled students and others. Due to this gap, it creates problems to learn mathematics.

Respondent D

Respondent D is 15 years old boy studying at grade V. He was born at Jamuniya - 4 Sarlahi district. His family is joint family with 15 members. His father income depends upon farming, and his economic condition is poor. He said "My father could not manage the money for us" due to their poor economic problem. His house is small with not sufficient rooms. He said "Parents could not succeed to manage physical facilities what I need at home". He said, "it is difficult to manage our daily life problems". He did not like to go school. Researcher asked with him why you are not interested to go school. Other students said to me "*U Langada aayo and I feel dominated*". He got dominated behavior by other students in school. He does not like to do the work what his father does i.e. farming work. He is interested in working at government job or business. His family uses native language at home. He also speaks same language at home with his parents. He said, "*Our home culture makes hesitated to communicate with the teacher and other friends at school, so I do not like to go to school*". He has used informal language at school, which is difficult to understand for teacher. He said "I could not speak pure Nepali language with teacher, teacher always scolds me".

Finally as an observer, the researches have indicated the everyday lives of four key information from above indication, it is indicated that Disabled Students in poor economic condition .We know that Disabled Students got more difficulty in learning mathematics at school because they didn't have that theoretical knowledge at their home. They had to engage in household work in the morning and in the evening. Disabled students are uneducated person, due to the lack of knowledge about the importance of education so. Disabled students are engaged in household works such as :shops, art and craft.

Disabled Students have poor Nepali language due to which they get difficulty at school. They had silence home environment , for example the responded A used friendly language in her class with teacher. The teacher doesn't like this language. Teacher expects respective language with his, so the teacher doesn't like this type student. Disabled students have their own mother language, which is not matched at school so they get difficulty in mathematics learning.

Individual discrimination is in practice in the society. Individual discrimination is also practiced in Disabled students. In disabled students' family, Disabled students are more suppressed and deprived of education than other members of the family. They should engage in some household activities and so rather than study which is one of the major factors for creating difficulties in mathematics learning.

Disabled students are more often dominated by others they are often called Apang by others children who make them children feel inferiority complex. They also lack their own local mathematics teacher due to which they often face embarrassing situation while trying to talk with the other classroom teachers and other friends.

Disabled students learned everything in their home which is not at the school environment. Finally, it can be said that due to the discrimination of disable family size, poor economic condition, illiterate family, lack of sufficient time at home for mathematics learning dominance behavior by their neighbor gender discrimination creates the difficulties in mathematics learning for the disabled student.

Discrimination towards Disabled Students

According to Jerri Leatherman the center's deputy legal director "All children do better in an inclusive environment. There are higher expectations of children with disabilities in an inclusive classroom and they have opportunities for social interaction they don't have in segregated classrooms"

Jadine Johnson said, "Students with disabilities often face discrimination by teachers and their peers due to assumptions about what it means to have a disability". An attorney with the center "Research shows that when students with and without disabilities are placed in the same classroom, they are better prepared to embrace diversity and inclusivity". Education experts disagree over whether special needs students should be included in regular classrooms or separated into their own learning environment.

"I don't plan to look at this at all. When you have a child with disabilities. It costs more money to educate them. What do they want us to do, not educate them?" he said, "I haven't had any complaints. I've had no complaints at all, in 14 years, from anyone about the fact that their child with a disability has been treated improperly in one of schools"

Specially one of the major components of this study is to analyze how far existing discrimination practice is supportive to learn mathematics of disabled children. The brief description of respondents is given below.

Language

Language was also one of the major problems of disabled students in learning mathematics at primary level. It wasn't only the language problems of disabled students. Generally, it was also the problems of other students too. On the basis of this research, we investigated the problem of those who were unable to use their body properly because of disease or injury etc. in short, we were investigated the language problems of disabled students of Madanpur Jamuniya Binagara school of Sarlahi district. While teaching the students at primary school, teachers used only Nepali language and students could not understand the language what the teachers used. It is the problems of disabled students along with other students. Because they language is the greater medium of human civilization that sets them a part from the other living beings. Language is a system of communication medium for thought, a vehicle of literary expression a social institution, a matter for political controversy, a catalyst for nation buildings. The language is the major component for learning. It is observed that disabled students tried to speak and understand Nepali language with teachers and other friends for learning mathematics. But there is misunderstanding betn language communication have come from different cultures. They used different languages which the teachers didn't know all languages. Students were interested in native language rather than Nepali language in learning mathematics.

Our parents at home frequently speak. Native language but they do not use Nepali. So we must speak native language at home. We have no opportunity to learn Nepali language at home but in school teacher always teach us in Nepali language. If teacher taught us in native language, it would be easier for us to understand the mathematic solution (student).

From above view; it shows that the disabled students have the language is major factor for creating the difficulties in learning mathematics.

"Disable students have language problem. They cannot be good speaking Nepali correctly, they speak mixed Nepali and local or native language which is difficult for us in understanding. They feel difficulty in understanding Nepali language in comparison to other students. That's the causes always backwards". (mathematics teacher).

From above view, it shows that the disabled students have language is major factor for creating the difficulties in learning mathematics for students.

Episode: 1

"In a observed class mathematic teacher just enter the room with chalk and duster with out text book all students stands up and said good morning sir "but not disabled students because all students cant not sat frequently this sentence, the teacher told them sit down usually teacher opened the text book and asked the question to the student did you finish the problem given you yesterday ? If the teacher got the answer yes. He went through another exercise if no teacher did that problem on the black board. Teacher opened the book again and wrote the topic L.C.M. He wrote a problem on the black board and solved it. All the students were busy to write the solution from the black board. The teacher did not review the previous lesson or related topic for L.C.M. and did not check the homework. After some times he asked with the students whether they understood the lesson or not some students said "yes sir" But one of the disabled students asked with teacher by their own language. Teacher did not understand his language and asked with him what do you mean ? and also said do not use your language. It is school not your home after this evidence other disabled students did not try again asked to teacher about mathematics problems students got much depressed sat on the bench. Then teacher again repeated the problem on the blackboard".

The above activities in the classroom show that disabled students use their own language at school and classroom. But teacher used Nepali langue at class. there is language misunderstanding between teacher and disabled students. It is the main problem for learning mathematics to disabled. From the above students and mathematics teacher views and classroom activities, it is concluded that there is

discontinuity in language disabled students and other person occurs discontinuity learning mathematics. This discontinuity carries the difficulties in mathematics learning. This is concluded that language arises the difficulties in learning mathematics for disabled students.

Teaching Techniques

As we talk about the role of teacher of teaching learning proves to disabled students there are the great importance of teaching techniques for learning mathematic. All students with disabled expect that teacher use more methods for teaching. Teachers usually treat all the students equally. We. 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 mathematics is much harder 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 bookish knowledge in mathematic classroom". (students)

The above view shows that for selection of teaching method always dominate the students. But the modern view of learning emphasis more collaborative and co-operative methods for teaching and learning mathematics.

"Lack of so much teaching materials I am unable to use material and techniques in the classroom and classroom is so much crowded but the school neglect another section for mathematics class" (Teacher)

The teacher view indicates that the large number of students sit together in class and student's feel difficulty for learning and teacher can not use teaching method and material.

One episode of the mathematics class is given below it was observed class about the teaching techniques, when researcher went to the mathematics class with mathematics teacher.

Episode - 2

One day teacher went to the class first then after the researcher also entered the class. all students stood up and said a good morning sir. The researcher told then sit down. It was noticed that the school environment has taught them about the respect for the teacher. On the other had teacher started to teach mathematics. He reviewed the previous lesson then wrote problem form text book and did problem on the blackboard by explain step by step. After one demonstration, he gave one more problem to the disabled to solve. It was on individual practice problem the teacher then just walked among the students and guided them who asked any thing at that time the classroom environment was seen disturbing with noise. Mostly with process of teaching teacher gave the problem to the students as practice and observed the mistake of the students but did not guide them. When he got mistake he came to black board and explained to the problem how to solve.

Hence the observed the class it is indicated that the mostly used method and strategies in classroom environment is controlling by teacher according to his method or strategy in the classroom.

Finally above the view and class observation we can say that disabled students problem faced by learning mathematics by not getting conceptual methods and techniques. It is also found that the techniques of measurement are different between home and school. Using method and techniques are not enough to learn mathematics for disabled students.

Interpersonal Relation

Interpersonal relation are social association connection or affiliation between two or more people who may interact overtly, covertly, face to face or may remain effectively unknown to each other. Such as those in a virtual community who maintain anonymity and do not socialize outside of the class room. In this study the interpersonal relation means the relation of disabled students with teacher and other students of class.

"We want to make good friendship with other students also but they do not like" (students)

Disabled students use friendly language with other students and with me also. They are dirty in appearance they are not lovely" (mathematics teacher).

From the above views, above views, it shows that students are interested to make good interpersonal relation with other students and teacher at class. it is noted that they are dirty in appearance and poor in Nepali language proficiency.

In observed class researcher's four key respondents were silent in the class. Among them respondents were more silent. The researcher asked question with them, saying why do you silent in class ? They simultaneously said we like to be silent sir. They were afraid of asking question in the class. They felt difficulty to ask question with the teacher due to their language problems.

Episode: 3

In the school visit in the observed class in mathematics teaching one day the mathematics teacher entered the classroom with the daily using material. Researcher also entered with mathematics teacher in the class room all the student stood up and said good morning sir. Teacher said morning and sit down. Teacher opened the book and wrote a problem from the book on the blackboard without, giving concept. It could be seen that all the students were engaged to write the solution from the blackboard. Some time teacher asked do you under standing and some student say yes and some person 'no' but disabled students not responds about teacher question. Again teacher gave a problem to the students were engaged to solve the problem most of the students checked their class work but researcher respondents could not solve but teacher did not respond them. Teacher started another problem. The class finished and teacher gave home work for remaining question.

By observing all the activities the researcher found that there is not good communication between disabled and other children. They eat together, sit together, but their company is different and not communication or interpersonal relation about mathematics problems. My key children disabled students feel shame to ask anything with teacher and they don't speak more with other children. Their interpersonal relation teacher and other children was not developed nicely. It is seriously be concluded that disabled students most often receive dominated behavior and have to cope with humiliating environment in the class room only because their poor Nepali language proficiency. There is not proper communication with mathematic teacher and disabled students in the mathematics class room shows dominance to disabled students for mathematics learning. The above discussion also indicates that the

mathematics teacher neglects the problem of disabled students in learning mathematics due to language. So interpersonal relations also influence to learn mathematics and they feel difficulty in learning mathematics, there is not good interpersonal relation with disabled and other members of the class room. Hence there is cultural language discontinuity in classroom, which are the difficulties of disabled students for mathematics learning.

Irregularity

Irregularity is one of the main problems of disabled students in mathematics learning. Family members though that you are disabled student in your school you could not do anything in your life. So that guardians told him not to go school regularly. The concept towards disabled students of his family is to sit at home, instead to go to school. They are seen irregularity in their school.

Respondent A:	1	Average attendance is 10 days in a month
	2	The attendance is only 8 days in the first period
	3	Their arrival time is about second period in attendance
Respondent B	1	Average attendance is 12 days/month.
Respondent C	1	Average attendance is 12 days/month
Respondent D	1	Average attendance is 10 days/month

The above mention data presented that their attendance in their school is miserable. By this, it is concluded that, their irregularity in school is the main problem in mathematics learning. But significant thing is that this issue is not implemented only to the disabled student but to other students too.

I am interested in going to school every day but I have lost my legs at the age of y years. Due to the problem of legs I can't go to school every day. My parents also help me to go to school there is also a problem behind this my father leaves home every day for job. He hasn't much time to take the school everyday. My economic status is too poor. I would have to face with many difficulties to go to school on other hand my family doesn't have sufficient money to by wheel chair to me.

"I am not regular in school because my school is about 5 km far away from my house. It takes about 50 minutes to reach the school from the house. When I started to

go to school almost I could not reach the school on time. Sometime I attend on the or sometimes on second period/1st period. My family is rich father provides me all what in need to school like wheel chair or eyeless but things I can't drive it because I have due to this problem assignment can't be solved. Then I am afraid of getting punishment and leave the desire of going. From the above it is concluded t that the disabled students interest to go to school. But due to the low economic condition, language and fear of punishment from teacher they feel quite difficult and afraid to go to school.

"It is so difficult to teach the students due to their irregularity. Students should be made engage 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. Then students are seen being divided in two different groups of irregular students feel them of being weak. Regular students actively take part in teaching learning activity whereas irregular students can't it makes them feel humiliation and they can't proceed forward in learning. This is the main issue of mathematics learning" (Teacher).

For the teacher student irregularity was the most important factor that caused problem in mathematics learning. Due to their irregularity teacher was confused whether to revise the previous chapter or to start up with a new chapter.

Not of being even a single educated member in the family lack of positive concept of parents towards education and poor economic condition are the factors that are playing crucial role in the irregularity of the disabled students. There is great impact in mathematics learning because of their irregularity. We did our great effort to make them regular in the class but we couldn't be success completely. What I want to teel in this context is that their study can't be improved until they are regular" (Headmaster).

The discussion presented above shows that there is the vast irregularity of the disabled students in the class which justifies that there is great problem in math's learning. The study also shows that many disabled students are unable to go to school regularly which is far from their interest. Some of the students are irregular due to their own reason and some due to fear of being punished in the classroom. Therefore such irregularity has brought the great obstacle in mathematics learning.

Learning Environment at Home and School

Home is regarded as the first school to all individual. They learned how to behave together, how to respect to 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 occupation economic condition and learning opportunities of the students at home. School is the second home of any child school environment reflects belief and tradition of the school community delineating the relation among parents, students and teacher.

Home environment is affected every day life to all individual. According to Ogbu, it is the cultural difference and cultural discontinuity between home and school that obstruct learning mathematics. For learning mathematics there is mostly good environment at home and school.

"If there were educated people in our family and in village than 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)

The above view of students indicate that there are not literate people in their family as well as in village. Due to this, good learning environment at their home cannot be create. As their economic condition is vey low their family as well an in village. Due to this, good learning environment at their home cannot be created. As their economic condition is very low their parents cannot provide the physical facilities at home.

Sometimes, when we come to school then other students say "U Apang' yayo, so we feel dominate at school. (students)

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

"I think this education would not play vital role in individual's learning. I expect my son could do some occupation as soon as possible by leaving school. It would be far better if he can joint farming or other any" (parents).

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 or take care of the younger ones while their parents are at work.

"I use learner centered method as well as explaining the problem step by step in the blackboard for mathematics teaching but disabled student cannot understand my language and my method" (math teacher)

In teacher view his teaching method is child centered. But due to the language problem they are unable to understand the lesson.

We provide the report cards of student's achievement for parents. If the students are failed in mathematics or have low performance then we invite to the parents at school but disabled students parent do not respond about it". (Head master)

According to headmaster view if the students are failed in mathematics or have low achievement the just calls their parents and suggests giving extra class or tuition to the disabled students but the parents do not respond.

"We don't have basic things in our house how long can we go on this way. Nobody is in the family to earn money. We are in difficult situation to survive. How can we send the children to school". (parents).

The above view indicates that economic condition is one of the major factor. Due to low economic condition they are unable to send their children to school.

"Our parents forced us, to do household works. They said parents said to us, you should engage in doing works.

This statement quotes that the parents of disabled students to involve in household work. They think that involving in household work is the main economic source of family, so they should be engaged in this work.

From above view, it indicates that the economic status of family influences to the achievement of the student. The high economic status can get better chance to buy books, copies and to take tuition and other activities.

Mathematics need more labour and effort than other. Disabled had not obtained such facilities at home. Disabled some parents of disabled teach, students are literate and some are illiterate. Some parents, can teach, cannot teach their children at

home. Parents of disabled students were influenced by their educational backgrounds. In a similar way, disabled students are generally dominated by other students. They are often called 'Apang' in everywhere. So, they feel some fort of humiliation in mathematics learning. Teacher also doesn't give more attention for their effective learning because of their friendly language so that, due to these various reasons they are backward at school. These all the reasons matches with the theory of Discrimination towards disabled students. Finally, researcher found that the discrimination of disabled students at home and school were unmatched. So, the disabled students felt difficulty in mathematics learning. It is said that home environment of disabled students is in favor of the mathematics of the mathematics learning and school environment is not conducive for the mathematics learning. The low socio-economic status, engaging on household work and other occupation and unmatched discrimination 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, CONCLUSION ON AND RECOMMENDATION

This chapter is basically concentrated in deriving some findings from the discussion of chapter IV. Besides findings and conclusions it has some educational implications, which are also discussed on the basis of overall study of the disabled children. Disabled students faced different difficulties such as: discrimination towards disabled students, language, interpersonal relation, discontinuity, irregularity, teaching techniques and environment at school and home. All people see them with different views. Disabled students feel uneasy everywhere because they tried to endure the discrimination done by the normal students, family members, teachers and so forth. This framework also show that how disabled students are discriminated by people. Language is one of the major problem of disabled students. How? Teacher taught them in Nepali language which they did not understand at all. In this way, it is a problem. Discontinuity is significant problem of them because they can't reach or go to school due their legs, hands, eyes problems. Parents' view is also a problem for being discontinuity as well as irregularity.

Learning environment at home and school is not appropriate of the disabled students so they become irregular in the class and sometimes leave the school too. The teacher teaches them by using his/her teaching techniques. The teacher doesn't 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 problem of disabled students which they can't understand easily. They feel difficulty in learning mathematics problems. Described above are the problems faced by the disabled students.

Summary of Findings

Mathematics is a language which is a basic tool of communication. Daily communication involves the frequent use of mathematical concept and skill. So, mathematics is essential for understanding and interpreting of very discipline. Now every human discipline such as chemistry, physics, social science, economic, psychology, engineering etc are interpreted as a mathematical model. Without having

mathematical knowledge, it is very 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, like economics, management etc. they need mathematics for advanced study. The twenty first century is said to be that of computer based information technology and it is all based on mathematics or equivalently logical thinking.

This is a case study related to difficulties in learning mathematics of disabled students at primary level in Sarlahi district. The purpose of the study was to identify the difficulties and causes of difficulties in learning mathematics for this purpose the specific objectives were to identify the difficulties in learning mathematics of disabled students at primary level and to find out the causes of difficulties. The design of this research is explanatory case study in which meanings were derived from total study; logic and reasoning of why and how it was like that, linking with theories. The case study of those sampled school children was carried out through participant observation and interview.

For the case study, two boys and two girls were taken; who were studying in grade IV four and five was taken as the example to support the findings of the study, John U. Ogbu's theory of cultural discontinuity were used and from this case study of difficulties in learning mathematics of disabled students following are the major finds.

-) Disabled students have used their mother language at home and Nepali language used in school. There is language discontinuity at home and school.
-) There is discrimination and discontinuity at home and school.
-) There is not proper interaction between students and mathematics teacher at school.
-) There is no proper interaction between disabled parents and school, teacher and school management about their children programme.
-) Disabled students' financial condition is not strong enough to send their children at school and afford them in their further education.
-) The size of disabled family is large, the children of parents of disabled not have conducive environment for mathematics learning at home.
-) The home and school environment is not suitable for the mathematics learning of disabled students.

-) At the school they always receive dominating behavior by other students and teachers.
-) By the economic condition and lack of clear concept about of education of their parents, they (disabled students) are irregular in the school.
-) There is lack of local teacher at school from the concerned community.
-) There is no sufficient time and literate person at village for mathematics learning at home for disabled students.

Conclusion

On the basis of above major findings the conclusion that the researcher derive are as follows:

Disabled students are unable to approach the school due to poor economic condition. Due to the lack of proper environment at home and school, that creates the difficulties in mathematics learning. Due to unmatched discrimination at home and school, that arises the difficulties in mathematics learning. For mathematics learning the students must be regular. Due to language problem that creates the difficulty in mathematics learning.

Recommendation

This is a case study related to difficulties faced by disabled students in learning mathematics at primary level in Sarlahi district. According to the finding and conclusion drawn from the study, the recommendation for further study. The following are some of the issues not answered and be further studied to validate the result of the study.

1. This study is done with in limitation and in particular area. The board and generals study may be done for overall disabled students.
2. The study can be done on the affect of parental involvement and supervision in mathematics classroom and its impact may be done.
3. A similar study can be done for lower secondary and secondary level and other subjects.
4. A study can be done on the causes of school, dropout problem of disabled students.

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