

Chapter-I

INTRODUCTION

Background of the Study

Domestic children are those children who are working in employers' (private) houses with or without wages and who are employed by one or several employers (International Labour Organization [ILO], 2001). Further, domestic child are those who work for others within the household chores as full or part time basis without having worker's rights and dignity. It is not easy to categorize the tasks performed by domestic workers. However, in general, they are employed to perform domestic chores such as washing dishes, cooking, cleaning the house, looking after young children and any other household-related activities. They are supposed as helping hands at homes. They are also given the sole responsibilities of tasks at homes. In many cases, they are victims of emotional deprivation, psychological violence and physical abuse (ILO, 2001). In most of the cases, they are confined at homes without seeing their family members for years and hence some of them have been deprived of education.

The use of domestic workers, especially in urban areas, is common in Nepal. It is difficult to estimate the factual information of its numbers and nature of domestic workers because of lack of authentic data. It has been estimated that there are about 162302 domestic workers working in Nepal. The number of domestic worker is growing rapidly and needs to be addressed as any growing economic sector by eliminating the existing unfair and exploitative labour practices in the absence of the legal protection.

There are several national and international legal frameworks mostly focusing on the rights of domestic child labourers working in the formal premises like factories or industries, mines, construction works, restaurants or hotels, and so on. On the one hand, the domestic workers are in the position of denial of enjoying even the fundamental rights envisaged by these legislations (Children-Women in Social Service and Human Rights [CWISH], 2011). On the other hand, there is no specific legislative instrument dealing with the issues of domestic workers.

Generally the terms 'mathematics' is defined as numbers of way which means the calculation, measurement and dealing of the problem of space, the way to thinking, analysings and synthesizing of data (Acharya, 2015). The world is moving towards the advancement of science and technology for the better fitness. In such a work education is a most essential factor like heart of human body. It is better to say education and human life are related to each other like a relation between nail and muscle in human body. Education is a system of training and giving instruction along with knowledge and development of skills. It is a kind of training to both mind and soul for reshaping a character.

Moreover, education also refers to human expenses because all kind of expenses together composite education. All those expenses that our ancestors collected have been together education to us. Education is a lifelong process of learning from the environment. The individual continuously acquires knowledge, skill, attitude and appreciations of the society in which s/he lives (Good, 1958). The major goal of educators in a democratic society will be to provide an equal opportunity for each individual to develop his abilities to his maximum potential and to prepare him to make his greatest contribution to society as a citizen. Aryal (1970) has stated education is the greatest force for a building up a country economically,

socially and culturally. The challenges have to be accepted by educationists who are the real builder of nation. Unless education is properly planned and organized, it is not possible for the social welfare for all. (cited in Sigdel, 2004)

In regard of importance of education; Maskey (1996) wrote, “Education has occupied the most prominent in the life of every nations worth the name ancient or modern. History tells us how much it was instrumental in the advancement of civilization and progress of the world and the giant strides made through it by modern nation are evident to even the most casual observer. In its scientific, technical and industrial branches it has truly been the hand maiden of progress in these days. The real education is the third eye of man. So the real education helps a man to see himself in the correct perspective without being disillusioned his egoism a prejudices. The true education enables a man to change adversity into prosperity”. (cited in Sigdel, 2004)

Mathematics is one of the major components of education. So, mathematics and human life are related to each other. Mathematics plays an important role in the organization and maintenance of our social structure. According to oxford advanced learner’s dictionary, “Mathematics is a science of number, quantity and space. Algebra, Arithmetic, Trigonometry, Geometry are the branches of Mathematics. According to the dictionary of Mathematics, “Mathematics is a group of related subjects including Algebra, Geometry, Trigonometry and Calculus concerned with the study of numbers, quantity, shapes and space and their relationship, application, generalization and abstractions. Mathematical operations and process involved in the solution of a problem of the study of some scientific fields”. In fact of continuous process of education, mathematics is an essential subject, has been given a significant place, second to language at all level. In this context, the NESTP mathematics

curriculum (1971) states the importance of mathematics in the following words.

“Mathematics, like language is a basic tool of communication. Daily transactions and communication involve the frequent use of mathematical concept. Thus, it is quite natural mathematics is given a very important place, second to language in school education”

Mathematics is a behavioural subject which is essential to everyday life. It is the base of all kind of scientific inventions and technological development. It is a man made science without which the world can not move. Human life without mathematics is impossible. The people who are illiterate also use mathematics in their daily life. So, mathematics is involved in every moment of human life. Mathematics like language is a basic tool of communication. Daily communication involves the frequent use of mathematical concepts and skills. So, it is considered as the fundamental component of literacy.

Mathematics like language is basic tool of communication. It is essential for everyday life as well as for higher study. Without the knowledge of mathematics it is very difficult for better understanding of other disciplines like economics, physics, and chemistry and so on. Accepting the need and implication of mathematical lives, Roger Bacon (1973) says, “Mathematics is a gate and key of sciences. Neglect of mathematics works injury to all knowledge. Since he/she who is ignorant of it can not know the others sciences or the things of the world. And what is worse, men who are thus ignorant are unable to perceive their own ignorance and so do not seek a remedy”

Nepal is a multi-ethnic, multi-cultural and multi- linguistic country. So, we can find syncretism of various cultures, languages, religions and castes. It is a model of mosaic society. In the real sense, Nepal is a garden of all castes and ethnic group. It is very diverse in its geographic conditions and more complex in its social situation.

Children are the beginner of each new generation. We cannot imagine harmonious society in future unless the children, at present, are provided with better fundamental facilities such as basic needs: food, clothes, shelter, fair social environment and parental care and love. These are the fundamental rights of each and every children living in this world. But it is unfortunate that in Nepal the large numbers of children are found to be engaged indifferent types work and deprived of its fundamental rights mentioned above (UNICEF, 1996).

Child worker or Child labour means “a person in the age of 5-14 employed for hire or reward on a full time basis and includes a self employed child and a child assisting his/her parents in their occupation for two or more hours”.(Urban child labour in Nepal, CWIN, Ktm, 1988 p.5). According to the UN convention on the right of the child, a child 1989 means “Every human being below the age of 18 years unless under the law applicable to the child majority is attained earlier”. The term Child Labor is used for employment of children below a certain age, which is considered illegal by law and custom. The stipulated age varies from country to country and government to government. Child labour is a world phenomenon which is considered exploitative and inhumane by many international organizations.

According to children Act and labour Act of Nepal (2048) the groups of under the age of 16 years old person are known as children. Below the age of 14 years children are strictly prohibited to work as labour. But the children of the age between 14-16 years can work , only when they bet facilities like less working hour, i.e 6 hours per day not more than 36 hours per week. In this way if they work for 3 hours continuously they must get rest half an hour. Child labour is not any a problem of Nepal but it is universal and one of the serious problems of the world (Nepal act 2048).

UNICEF (2009) defines child labour as work that exceeds a minimum number of hours, depending on the age of a child and on the type of work. Such work is considered harmful to the child and should therefore be eliminated.

Ages 5-11: At least one hour of economic work or 28 hours of domestic work per week.

Ages 12-14: At least 14 hours of economic work or 28 hours of domestic work per week.

Ages 15-17: At least 43 hours of economic or domestic work per week.

Historically, the problem of child labour first appeared in the 16th century. This was further expanded in different forms and areas in the 17th century and children were further exposed to high risk areas in the 18th century and 19th century. In Germany, France and UK, the problem of child labour was obvious in factories: cotton, mills, glass, and match-making and brick kilns, whereas in Norway and Sweden, the problems existed in farming, herding and fishing. In France a welfare act for a child labours are introduced I 1841 and 1853 the government of Germany introduced the first law regarding the health and safety of children and trade unions in Europe began to raise the issue of child labour as pants and parcel of their movement. However, implementations of the laws were very poor. Child labour in those days seems sporadic in nature. It is because in the same book, Kostal and Baklund have claimed that the new quality of life including technological and economic changes better organized society for the working class contributed to eradication of the child labour system from Norway.

Internationally domestic child labours is defined as children working in employer's house with or without wage Domestic Child Labour (DCL) are basically

employed to perform domestic chores such as washing dishes cooking, cleaning the house, looking after young children and any other household related activities. The domestic child labourer may consider as a helping hand in the various activities.

In most definition of DCL a child is usually considered to be below 16 years of age.

Yet as the new ILO convention stipulate that any reform under the age of 18 years to be protected from employment on the worst form of child labour. These studies consider any person below 14 years working in an employee's household as a domestic servant. Among a population of 23.4 million in Nepal, 10.7 million are children under 16 yrs of age- almost 44% of the total population. According to a national wide study by Tribhuwan University in 1999, 2.6 million children more than 27% are at work as child labours between the age of 6 and 14 yrs. 1.7 million are economically active and 0.9 million are working without pay. In this context, this study had focused on present conditions of domestic child labour of the study area.

Of about 4.7 million children ages six to 14 years in Nepal¹, 25.5 percent are economically active and about 4.4 percent are wage workers. Among the children working for wages, almost 40 percent, or some 83,000 children, work in the informal service sector, which is largely comprised of domestic labour.

Statement of problem

Participation in mathematics education is an important dimension to access the development of a society. Mathematics is the primary root of educational system. Education develops the human resources which are interpreted as a process of increasing the knowledge, skill and capabilities of all people in the country. In general, it can be seen that mathematics is essential for ones daily works; official works, household work and field works. In fact, in every working field people are

using mathematics knowledge and skills to lead their life. But in the context of Nepal, all people do not get the chance of education and the educational achievement in general and mathematical achievement in particular, is poor not good due to problem like social, economical, cultural barriers, some of them acquire knowledge from own construction, they build mental scheme by ethno- mathematics process, their culture and custom may lead to their intuition and indirectly affects to them for learning mathematics. Students feel mathematics is a difficult subject. DCL students have poor mathematical performance in learning mathematics. What are the reasons behind this? So, it is necessary to find the causes of difficulty in learning mathematics for them. So, I am motivated to carried out the study “Factors affecting the Learning of DCL students in mathematics at Basic level. Therefore, in this study, I have formulated the following research questions and objectives.

-) What type of learning environment is provided to DCL students?
-) What are the influencing factors that affect the learning of DCL students in mathematics?

Objectives of the study

Based on the research questions mentioned above, this study aimed to fulfil the following objectives:

-) To identify the learning environment for DCL students in school.
-) To find out the major factors that affect mathematics learning of DCL students.

Significance of the study

The goal of teaching mathematics is to provide students an essential tool for the further study and everyday life. All physical, biological, social, management science and technology are very much dependent on the mathematics and the use of mathematics in everyday life is increasing. Therefore, almost every child throughout the world at the age group 5-16 years are expected to the study of mathematics at school education with value of mathematics in every education system. Mathematics has been chosen as the subject of interest, this is considered as a gateway for getting job in the market and opportunities to the study in multiple valued subjects such as science and technology.

In the modern world, mathematics is being increasingly used in sciences, technology, social sciences, management education etc. Hence it has been considered as a queen and servant of all sciences. The mathematics teacher can teach mathematics by applying modern technical devices and more effective methods. Even then the performance of students is poor in mathematics. Various researches have been conducted to find out variables that are responsible to influence the achievement in mathematics. Similarly, a number of researches have been carried out to find the socio-economic conditions of DCLs but no such study has been made to find out the relationship between children's learning and the socio-cultural factors that may provide an understanding for children's schooling and learning mathematics as well. So this study would have a significant meaning in studying the "factors affecting the learning of DCLs students in mathematics at primary level". However, no such study has been made yet in the area of mathematics education, so this research would try to investigate the learning difficulties in mathematics of DCLs students. In such argument, I was encourage to know the influence of mathematics on DCL and would

try to identify the factors affecting mathematics learning of DCL children. The study would have the following significance:

-) The study would be important to identify how the learning environment affects the learning of DCL students in education sector.
-) The study would be useful for NGOs, INGOs and other related organizations.
-) The study would find out the reason of low achievement of DCLs students in mathematics which would be helpful for teachers and stakeholders related to education.

Delimitations of the Study

Any study cannot overcome all the fields. The purpose of this study is to fulfill the academic degree of masters' in mathematics education. The study have following delimitation.

-) This study is based on Basic level students.
-) This study is based on only one school of Kathmandu valley.
-) This study is delimited on qualitative research design.
-) Information was collected from the students, teacher and parents only.
-) Being qualitative research, the findings of the study may not be generalized.

Definition of Related Terms

Factor: Those things, which affected in learning mathematics i.e home environment, pre- knowledge of student, discipline socio- economic status of the student.

Domestic child labour: Domestic child labours is defined as children working in employers house with or without wage Domestic Child Labour (DCL) are basically

employed to perform domestic chores such as washing dishes cooking, cleaning the house, looking after young children and any other household related activities. The domestic child labourer may consider as a helping hand in the various activities.

Achievement: It is defined in term of the score observed by the students in mathematics.

Basic Level: Students enrolled in grade 1 to 8 is known as basic level.

Chapter – II

REVIEW OF RELATED LITERATURE

In this chapter, I describe the review of the relevant literature relating to my research topic. This chapter includes the description of the different literatures and theories. This chapter also includes the conceptual framework which shows the process of the research and theoretical understanding. The literature review helps to avoid the duplication of the work and to synthesis the previous work (Acharya, 2011). The basic purpose behind the literature review is to identify the gaps of the research, develop the conceptual and theoretical framework. A careful and systematic review of the relevant literature and studies is both essential and helpful for a through understanding of the subject of one's study.

According to Creswell (2007) literature review is the study of higher ongoing dialogue about a topic, filling gaps and extending prior studies. To this end, a researcher must have knowledge of already established theories and researches related to the problem chosen by him or her. Review of literature is an exacting task, calling for a deep insight and clear perspective of the overall field (Wagley, 1995). So, the review is inevitable in any investigation.

Literature review helps in undertaking new research problems in a way to provide continuity with the past research by avoiding unnecessary duplications. Such a review is likely to enable the researcher to view the study in hand against the background of previous research. The knowledge acquired from earlier research helps in locating sources, for example, selecting procedures and methods, delineation of the problem, interpretation of data and selection of literature. Finally acquaintance with the concerned discipline and their trends helps to update the researcher's knowledge

as well. Keeping in view of such importance of literature review, an effort is made here to present some significant views, studies and practices that help in improving its relevance. I reviewed different literature by categorizing empirical and theoretical review.

Empirical Review

A review of related literature provides the knowledge of what has been established, known or studied and what has been attempted yet. In other words, review of literature is necessarily required to find out gap in research in further study. The purpose of review of literature is expanding upon to the context and background of the research. Different researches as well as research institutions have done several researches about different children.

Baral (2004) did a research on “A case study of street children for learning mathematics.” The main objective of this study was to investigate how the street children learned mathematical skills. Different tools such as case study, observation and interview were applied to investigate their learning of mathematics skills and Vygotsk’s social constructivism theory was applied to analyse the data. He concludes that street children of the Kathmandu valley had basic mathematical knowledge. The level of their skill was different according to the work where they involved in.

Bastola (2063) studied on “A study on the factor affecting the achievement of Dalit students in kaski district.” The purpose of the study was to describe the learning environment for Dalit students in the school and find the relationship between the teacher and Dalit students in the class. To identify the major factors those affect the mathematics achievement of Dalit students. He took 3 students, 3 parents and 3 teachers as sample. He used observation and interview schedule as tools. He found

that poverty, housework load, expensive education, motivation, health of students are the major factor affecting the achievement of the students.

Ghimire (1997) did a study on “A study on factors affecting teaching/learning mathematics at secondary level”. The purpose of the study was to find out the factors affecting in learning of mathematics in secondary level by sex-wise and rural/urban location of schools in terms of the following school environment, family background, motivational factors/ physical facilities, interest of the learners and instructional materials. To analyse the data, t-test was used. He found that environment affects the students learning of rural areas and girls learning affected more than that of boys. The students of urban areas were more affected by the use of instructional materials and girls paid more attention to the use of instructional materials.

Gyawali (2006) studied on “Mathematics achievement of grade V students from Yadav and Chamar community”. The purpose of the study was to compare the mathematics achievement of yadav and Chamar students. 100 students with 70 boys and 30 girls were taken as sample. The researcher used achievement test of Yadav and Chamar students with the achievement of 21.82 and 25.04 respectively. The mean of Yadav student was less than the mean of Chamar student.

Khadka (2006) did research on “The factor influencing the attitudes toward learning mathematics to the children of Ex- Kamaiyas”. The main objective of this study was to find out the influencing factors of learning mathematics to the children of ex-kamaiyas. Different tools such as case study, observation and interview were applied to investigate their learning mathematics attitudes. This study concluded -behavioural attitudinal study on the influencing factors toward learning mathematics and the affect of parental enrolment and supervision in mathematics classroom.

Lammichhane (2008) did dissertation of title “ Mathematical concepts used by out-of – school children. It is a descriptive study with the aim to find out mathematical concept used by out-of- school children from the Tharu community. She found that due to their traditional culture, the out-of- school children learnt different mathematical concepts during their household activities.

Rahman (2003) did a study on “A study of achievement in mathematics of eight grade students of different ethnic groups of Nepal”. from institute advance institute studies in education, University of Luchnow, India with the aims to compare the mathematics achievement of grade eight students of different ethnic groups- Tamang, Magar, Tharu and Sarki and found out the difference in achievement of different ethnic groups in different domains: knowledge, comprehension, skills and application. The sample was selected by random sampling method. To analyse the data mean, t-test, F-test, pearsons coefficient of correlation were used.

Shahi (2009) did a case study of Doti district on “factors affecting achievement of Dalit students in Mathematics” with objectives to find the learning environment and affecting factors in mathematics achievement of Dalit students. It is a qualitative research in which he has used case study, observation and interview as data collection tools and taken six Dalit students and their parents and six peer groups as sample for the study. He has found that weak economic condition, social belief, tradition of the society, psychological factor, health problem, distance of school, family environment of the parents were the factors affecting the achievement of Dalit students.

Thapa (2001) did a research on, “Learning strategy for out of school children of Dalit community”. The objectives of the research was to find out the learning skill and ways of learning in daily life of untouchable children, to examine the skill which are helping them for the better life in the future and suggest the ways of establishing

linkage. Observation form was the main procedure of data collection. There were contents which were not contextualized and there was the marked difference between society and classroom learning. In out of school classes, more emphasis was placed on theoretical aspect and less stress on practical matters. Even in the training materials, biological approaches were not included. The study drew some implication for the improvement of teaching and learning method of the out of school programme curriculum. It also comes up with the implication that out of school program materials must be related to everyday life of the children and their ways of learning.

Theoretical Literature

There are various theories related to children's learning and development. They are- Operant-conditioning, gestalt theory, theory of fear, theory of school effectiveness, trial and error, social learning theory, cultural difference and discontinuity theory, everyday life theory, social construction, constructivism and so on. In this study, I was used the following theories.

Humanistic Learning Theory

Humanistic psychology emphasizes a person with self-agency which means individuals can exercise their own choices to determine their own personal growth and change that are enabled but not directed as in behaviourist learning theory. This approach to learning psychology emerged as the reaction against the prevailing positivist theory based on behaviourism in the 1950s. The development of this theory is strongly associated with the emancipator. The essential concepts of humanistic theory of learning as summarized by Roberts (1998) includes: Each person is unique and is a whole, every individual has an innate potential for a fully developed 'self' who is essentially good, every individual knows intuitively what they need for their

growth, and they have self-agency. Rogers(1961) stresses on the healthy development of this 'self' to activate all the capacities of the 'self' which awaits only the proper conditions to be released.

Constructivism

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

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

From above axiom, Upadhyay (2001) took three terms action, reflection and scaffolding to describe broad aspects of constructivism, psychological aspects, Philosophical aspect. Piaget stresses on the key word 'action' through which he

advocates that knowledge is gained. He said that essential way of knowledge is not directly through our sense, but primarily through our action. Philosophical aspect of constructivism is also called radical constructivism, which is led by Glasserfeld who advocates that knowledge is personal, subjective and unique. And anthropology aspect is termed as social constructivism headed by Vygotsky, who states that knowledge is socially constructed.

Vygotskian Constructivism Theory

Constructivism is the new theory. Vygotsky has developed “Socio-cultural theory” and he believed that children are active seeker of knowledge. In this theory, rich, social and cultural context deeply affect children’s cognition knowledge is constructed in social situation of negotiations rather than being the reflection of the objective reality, which is known as social constructivism. In social constructivism theory, each human being makes sense of the world in a unique way. According to Vygotsky, the children’s development cannot be understood by studying the individual that it needs to examine the external world. Child can capture every kinds of information which is needed from the context to construct the knowledge (Acharya, 2015). The role of experienced person is to assist the child providing the structure and questions that provide the assembly of the information and organizations.

According to social constructivist, Vygotsky knowledge is constructed in two ways in the social situation. Firstly, social interactions influence on the nature of knowledge that is constructed and process of individual use to construct that knowledge. Thus the constructions are socially centred and involved process of understanding, constructing meaning and making sense, children construction of knowledge is not from only individual but from also the context and the interaction with more knowledgeable

others. Here the knowledge constructed by child is not through child's capacity only. The child needs some mediator like parents, teachers, adults or peer to uplift his knowledge from the knowledge s/he has. These mediators are the members of society and cultured context influence what that member thinks about how that learns to think and acquire information any why children learn the particular form of knowledge. Thus Vygotsky proposes that child's knowledge could be predicted if we could understand a social context. Thus Vygotsky's child is a social, outer culturally determined child.

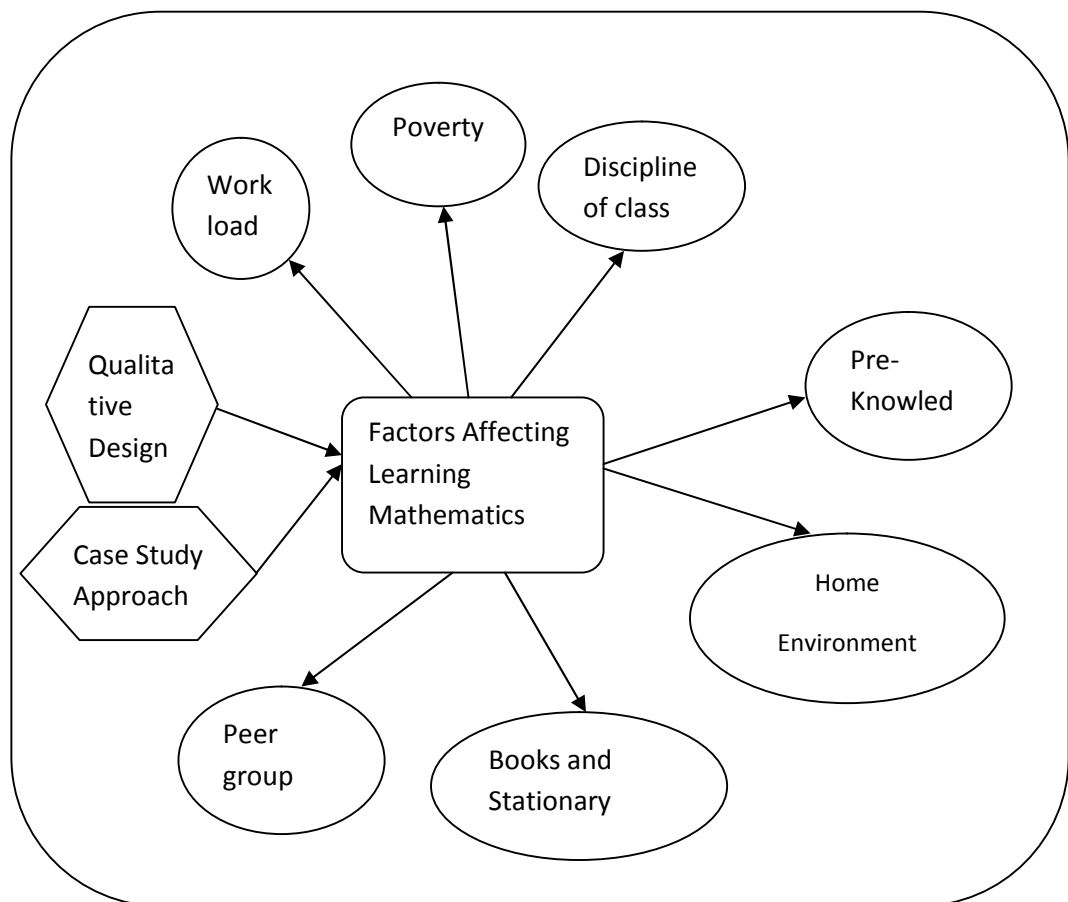
Cultural Difference and Discontinuity Theory

Ogbu (2000) delineates about the cultural difference and discontinuity theory that deals with the problems in children's learning caused by the difference and discontinuity between the culture of home and school. Those children, whose home cultures are much similar to the cultures of school, can cope easily with the system that may result better achievement. Similarly, the children with unmatched or dissimilar home cultures with school cultures and they do not have enough attention in their learning and does not get much recognition of their cultures and they have to work hard achieving learning outcomes compared to the children with good matched. And he emphasizes learning not only as the product of the culture and language differences but other the nature of the relationship between the culture and language of minority/ disadvantaged and dominated groups. The dominant groups are controlled by the school system through implementing their curriculum, and using their language as the only means of instruction.

Conceptual Framework of the Study

This is the case study about the “Factor affecting the learning mathematics of DCLs students at Basic level” which is based on the theory of social constructivism that assumed more collaboration of learning environment which proposed the effective learning procedure to develop new knowledge for DCLs students. The framework of the study was as follows:

Figure1: Conceptual Framework



Chapter-III

METHODS AND PROCEDURES

This chapter describes how the present study was conducted in the course of answering the research questions, particularly explaining the methods, design, sampling process, sample, study area, tools, data collection process and analysis was used while addressing the research question.

Design of the Study

This study is based on qualitative research design with case study approach that especially concerns with exploring meaning and the way people understand things. So, this study was qualitative design. Qualitative research can be regarded as 'naturalistic inquiry' in a sense that it is concerned in natural settings by trying to avoid any intentional manipulation and distortion of the environment of the informants by researcher. This is a case study of factors that affect mathematics learning of DCL students. So, qualitative technique was used to analyse data. According to Patton (1990), qualitative research accepts that people know themselves best and can describe, interpret and talk about their own environment.

Study Site

My study is related to learning difficulty in mathematics of DCLs students, the site selection is also a very important task in order to find the appropriate informants. I had chosen Nandi Secondary School Naksal for my convenience.

Sample of the Study

This is qualitative inquiry, so the sample size in this study is not fixed. According to Anderson, there are no rules for sample size in qualitative inquiry (Anderson et.al 2001, p.123). Patton (1990) has mentioned that main difference

between qualitative and quantitative research lie on the sampling approaches.

Qualitative inquiry typically focus in depth relatively small samples, even single case (n=1) can be selected purposefully. So, the sample size of this inquiry depends upon the researcher what s/he wants to know, what is the purpose of inquiry, what can be the credibility of the study and what can be done with available time and resources. So, the researcher's respondents of the case study are DCL students, their guardians and mathematics teacher. As one of the non- probability sampling, the researcher used 'purposive sampling' to select relevant informants that can be done with a specific purpose in mind, and that purpose reflected the particular qualities of people or events chosen and their relevance to the topic. Four DCLs students (2 boys and 2 girls) from grade seven and their guardians and one teacher were chosen for the study.

Tools for Data Collection

This being a qualitative data, I used qualitative tools such as interview and observation . The tools used for this study is presented below:

One of the most important parts of the study is data collection. For this, I developed observation guidelines and interview guidelines as a research tools. Every aspect of the study can be analysed and studied on the basis of data techniques. The outcomes and the validity of the study depend on the techniques of data collection. There are many tools for the qualitative research to get the information from the people about their experiences, ideas and believes. Data were collected from case school, written documents and previous research. But the primary data were collected from target students, guardians and teachers through interview, interaction and observation of students. The brief descriptions of the tools are present below:

Observation Guidelines

In the way of collecting primary data, the observation method is commonly used. It has become a scientific tool and the method of data collection for the research. Under this method, the information was sought by the way investigators' own direct observations without asking from respondent. The classroom observation form was developed by the researcher with the involvement of experts. Students' regularity, teachers behaviour towards DCL students, relationship between teacher and DCL students, DCL and non-DCL students performance, learning behaviour of DCL students, teachers' guidance and motivation to DCLs students were included in the observation guideline.

Interview Schedule

Interview is also the method of which is the most commonly used to collect Primary data. It is the means to express internal thought, interest, concept and thinking of a person. It is a tool to find out experience, internal thought of person according to their acting, looking and facial expression.

The interview schedule was developed in semi-structured form. It was conducted among 4 students and their guardians and a mathematics teacher with a help of interview schedule

Quality Standard

Quality standards are required to maintain trustworthiness and to provide quality in a research. Conventionally, a researcher needs to include internal validity, reliability and objectivity to maintain trustworthiness in a research. These words are approximately close to positivist research paradigm whereas I used interpretive research paradigm. So, to maintain the trustworthiness in my research, I heard

participants' voice and I established myself deeply immersed in the research field. I tried to find out the actual data by conducting series of interviews regarding the same theme until I got the saturation of my research theme. I tried to bring out the ideas of the participants staying with them and interacting on the topic. To maintain trustworthiness in my research, the following concerns topics are used.

Credibility

Credibility is the criteria which talks about the idea of isomorphism between constructed realities of participants and those realities as represented by the researcher. There are several techniques for increasing the probability of such an isomorphism like; prolonged engagement, peer debriefing, negative case analysis, member checking and so on. Prolonged engagement technique is used to establish credibility in my research. I spent maximum time with the research participants to establish the relation between constructed realities of participants and my realities over the research. From the series of interviews with the participants I got the answers of my research questions. So, until I reached the saturation point of my research questions, I tried to get more information from the participants (Guba & Lincoln, 1989).

Transferability

To establish the transferability, I included thick description what participants said during the interview. Though the participants teach mathematics in the higher level now, they had painful experiences regarding their school education and college education. I tried to quote their words directly. This shows that participants and their experiences and views are more important to construct the transferability in this

research study. So, I also tried to engage myself to interact with the participant to bring out the real data in my research (Guba & Lincoln, 1989).

Authenticity

Authenticity talks about fairness, beneficence, and so on. My research participants were unknown to me before this research study. But, I chose the participants from different cultural and geographical backgrounds to make my research more representative. I included all possible information that I got from the participants regarding the research issues that they expressed and shared during interviews.

Data Collection Procedure

Data gathering is very risky work in research. After reaching in the research field, firstly, I created the friendly environment with my participants and started talking with them. I chose my study field, which later can open up so many issues about DCL students. I have talked with research participants in a very simple way to know their world view of my concerned topic. I made my observation guide line to collect the data. I took interview with my participants such as: students their parents and teacher and conducted focus group discussion with DCL students. During this time I observed them carefully how they learned and what difficulty they felt on learning mathematics.

I wrote the information in my diary. I did try my best to translate their descriptions so that the statements would give the intended meaning. Having been the qualitative work, it is more analytic and there is nothing statistically presented. In the process of data analysis and interpretation, I tried to triangulate the findings with possible theoretical lens.

Process of Data Analysis

Data analysis process, I think, is very tactful work than data gathering. I was very patience and dedicated in the time of data gathering. While preparing to analyse my data, I read and scrutinized the transcripts of my interviews after converting them into the compact discs so as to seek for the meaning of the interview (Denzin & Lincoln 2005). I paid my attention to what the research participant said and I paid much attention to in which situations they said, as situation plays a vital role in giving meaning to their voices (Marshall & Rossman, 2006) after observing the data, I linked them with the theories mentioned in literature review section to interpret. I analysed the data with my best to produce the accurate descriptions of the contents.

Chapter-IV

ANALYSIS AND INTERPRETATION

This chapter is mainly focused on the analysis and interpretation of the collected information. In this chapter I have address my research questions; what type of learning environment is provided to DCL students? What are the influencing factors that affect the learning of DCL students in mathematics? In order to answer first research question systematically the information was collected for answering the research question related to learning environment of DCL students. I reached the respective sample school and necessary information was taken during the time of classroom teaching. Different episodes of different classrooms were observed and taken interview with my students, teacher, and parents and carried the FGD to students. For answering the second research question I took the interview with mathematics teachers, students, parents and conducted the FGD with students. The interpretation of analysed data was done using different theoretical perspectives as explained literature review section. For this, this chapter is organized into two sections. Section I discussed about learning environment of DCL students and section II discussed the influencing factors of learning mathematics of DCL students.

Section I: Learning Environment of DCL Students

In this section, I deal with first research question, for this, I collected information from the case school. The data were interpreted and analysed in the following headings:

- (1) Introduction to case school,
- (2) Introduction to respondent students,
- (3) Learning environment of the case school,

- (4) Classroom observation of respondent children in the case school,
- (5) Case Study of respondent students,
- (6) Mathematics teacher's view towards DCL students,
- (7) Guardians' views towards DCL students,
- (8) Non DCL students' views towards DCL students,

Introduction to Case School

Nandi Secondary School is located in ward no one of Kathmandu Metropolitan city opposite to Nagpokhari. It is 1 km far from the highway. It was established in 2004 B.S. as a primary wing and secondary level started in 2022. The school appeared in S.L.C. exam for 2050 times till 2072. The teaching staff consists 12 secondary, 15 lower secondary and 13 primary teachers and 5 were working as non teaching staff.

Physically, the school has three concrete buildings with 18 class rooms, 5 office rooms, 2 store rooms, one library room, 2 office rooms for resource person, 1 canteen room and 10 separate toilets. The school is compounded with wall. The school is only one public secondary school in ward no 1. It is surrounded by more than two dozen private boarding school. It is the resource centre of about 72 schools. It provides a good platform to the students of poor and marginalized groups of people. So, rate of new admission is being increased yearly. The school runs grades 1, 6, 7, 8, 9, 10 with section and 60- 100 students are taught in one section. Since most of the students are from financially poor family, problems of admission fees, books and stationeries, uniform have to be faced in school. The school runs 8 periods in a day including the extra course on mathematics and English.

The achievement so far made by the school ranges 25% to 60% from grade 1 to 10 and above 74% in S.L.C. The students who passed S.L.C. are now doctors, engineers, lawyers, journalists, teachers, social workers, cinema makers, singers, army and police. The school society is formed by different castes like Brahmans, Kshetri, Dalit, Janajati but the majority is of Brahmans and Kshetri. Most of the students are DCL and live in Nagsal. They work household works for their owner and carry out their study. The employer pays for their study. Most of DCL often lack books and stationeries, time to study, a good home environment and they have heavy workload and some of them have been victim of physical and mental tortures.

Enrolment of class-wise students of the case school:

Class	DCL			Others			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Nur.	-	-	-	-	-	-	9	5	14
1	4	10	14	11	13	24	15	23	38
2	6	8	14	8	13	21	14	21	35
3	9	16	25	14	17	31	23	33	56
4	9	12	21	10	19	29	19	31	50
5	15	21	36	17	17	34	32	38	70
6	15	27	42	17	19	36	32	46	78
7A	5	14	19	16	14	30	21	28	49
7B	11	9	20	12	15	27	23	24	47
8A	12	17	29	8	32	40	20	49	69
8B	12	11	23	8	32	40	20	43	63
9A	6	10	16	21	17	38	27	27	54
9B	4	7	11	14	20	34	18	27	45
10A	7	7	14	14	20	34	21	27	48
10B	7	2	9	13	23	36	20	25	45

Source: school document

Demography of Teaching Staff

Teachers, students and non-teaching staffs lie in school family to maintain the good school environment. For the good learning of the students, equal participation of teachers, students and non-teaching staffs is needed. So, they have equal responsibility to make students success on their learning. The demography of teaching and non teaching staff of the case school is shown in the appendix V.

From the demography given in the appendix V, it seems that most of teaches are well qualified, experienced and trained. Non teaching staffs are also sufficient at school. So, all the staff should go together to get good progress of the school and make students success in learning.

Introduction to Respondent Students

Nandi secondary school is only one public school in ward no one of kathmandu Metropolitan city where most of students are employed at home to work. They work as domestic child labour. They do household works and come to study at school. They hardly get good environment to study. Most of them are victim of both physical and mental tortures. To find the factors affecting their learning in mathematics at basic level, the following respondents were taken as sample for research.

Sarita Magar

Sarita Magar was from Kalikot district. She was 13 years old. She had 9 members in her family with one elder brother, one younger brother, one elder sister, three younger sisters and parents. Her parents possessed home and land in her village. They worked as a day labour to earn their living which she thought was not sufficient for her family. Her father could read and write but mother was illiterate. As per the

suggestion of her father she left the village in the hope of study and brought in city by her father and she is staying in one of the houses in Kathmandu. Before this she was employed at home in Surkhet but she left it because she did not get chance to study. Earlier she joined school in her village where she passed grade III. Now she is studying at Nandi Secondary School in grade VI for which the employer provides financial support.

Having employed here in Naksal, she had to do household works like washing dishes and clothes, sweeping house, taking care of the owner's children, going for shopping, cooking and other small works at home. She had to work 10.5 hrs a day. She got little money at feasts and festivals and other religious occasions which was not sufficient for her to fulfil her daily expenses at home and school. Nevertheless, she sent some money which she kept as saving to her parents. She usually went to bed after 10 pm and had a separate sleeping room. She had been sick but had to work in injuries and sickness. She hardly got time to rest. Her master and mistress did not provide any recreational materials at home. She used her little free time on reading books of the course. During her staying in this home, she had suffered from fever and headache and got better consulting with doctor for which the employer pays. She took bath two times in a week. She did not get breakfast regularly. Her commonly eaten foods were dal bhat and curry which were different from the owner's food.

Regarding her problems, she said that she had been given heavy work load; family members were much strict so that she could not do anything without their permission. They made her anytime do some kind of work. She did not get time to study. According to her, she was treated badly. She had to face harassment both physically by beating and going with out food and mentally by threatening. She was harassed almost daily. She did not get permission to visit her home in village but her

father visits 1-2 times in a year. Her father did not feel happy as he knew her daughter was feeling pain. She had not got any support from any NGOs and INGOs.

Sarita did not enjoy staying here and wanted to go back home village. Her present home was not good for staying as she got different food, got physical and mental tortures, she had to do heavy duty. So, her performance was not good in school. All she was doing this now was for her study due to the poor economical condition of her family.

Jyoti Tamang

Jyoti Tamang was from Dhading district. She was 13 years old and she had 9 members in her family. She was staying in one of the houses in Om Shanti Chowk working as a domestic child labour. She possessed home and land in village. Her parents' occupation was agriculture. Her family income was sufficient for her family. She left her village for the first time and working as a DCL. Her parents know where she was staying now. She came here as per the advice of parents and brought in city by her relative. Her parents were literate. She studied up to grade III in her village. Now the employer paid for her study. They sent her school regularly.

As a DCL, she had to do sweeping, sometimes cooking, washing clothes etc. She works 4 hrs a day. Her guardians kept her money and she was planning to send to her parents later. Her earning was not fixed. It depended on the employer's will. She generally went to bed at 10 pm and had a separate sleeping room. She had not been sick since her staying in this house. She had no experience of working in injuries and sickness.

She got enough rest time which she used on reading and playing. She had access to recreational materials like watching TV, badminton, video games etc. at

home. She got the same food as others have. Her commonly eaten foods were Dal Bhat, curry, momo, noodles, meat etc. She did not feel any difficulty staying in this home. She was not harassed by the employers. They allowed her to visit her parents in village once a year. Her parents visited her twice a year.

She did not like to leave the place now. Her home environment was favourable for both staying and studying. She was treated well like other family members at home. She wanted to be a nurse in future.

Pramod Chepang

Pramod Chepang was staying in one of the houses in Nagsal as domestic child labour. He was from Gorkha district. He was 13 years old. There were 7 members in his family including parents, one younger sister and four younger brothers. He had own house and land in village. His parents' occupation was agriculture but did seasonal business of mechanic in kathmandu. Earning of his family was sufficient for his family he supposed. He first time left his home as per the advice of his parents and they knew the address where he was staying. Although his parents were illiterate, they sent him to local school where he passed grade 3. Now, the employer offered him to send school and paid for his study.

According to him, he was brought in city by his Fupu who earlier worked in one of the relatives of the owner. He was employed to work such as cooking, washing clothes and dishes, sweeping and other household works. He said the main reason for doing this was for his study. He was here for the first time and had to work 7 hrs a day. The money he saved was sent to his parents especially when he went home at Dashain. He always went to bed at 9 pm and sleep in his separate sleeping room. He

had not been sick during his work period, so he had no experience of working in injuries and sickness.

He said that he had enough rest time and loved playing games and reading. His master also allowed him to use computer, TV etc. at home. He ate the same food as the owner did. His commonly eaten foods were Dal Bhat, meat, noodles etc. He says he had not been facing any problems yet both physically and mentally. He got scolded at the time he made mistakes. Dipendra Praja enjoyed living now. He did not want to leave the place. He was supported by NGOs and INGOs for his study providing uniform and stationeries.

Madav khanal

Madav Khanal was from Ramechhap district and working as a domestic child labour in one of the houses in Baneswor. He was 13 years old. There were six members in his family with parents, one elder brother, one younger brother and one younger sister. His parents' occupation was agriculture. His family income was not sufficient for his family. He left his village as per his will to study. He was brought in city by one of his relatives. His parents knew his address where he was living now. His father was literate but mother could not read and write. He studied in his village school up to grade 3 and came here to study better. Now he worked at home in Baneswor. He had to do household works like washing and ironing clothes, cooking, going for shopping, sweeping etc. His reason to work was to study. His employer paid for his study. He worked 6 hrs a day. He sent the money given by the employer as per their will to his parents at Dashain when he went back home. He has suffered from fever and headache and cured it as it is. He took bath twice a week and did not have separate sleeping room. He sleep in the room where his uncle sleep. He did not get

harassed except scolded sometimes. He did not like to stay more here and wants to go back home as it was better than now where he was.

School Learning Environment

Good environment is important factor for good learning. School environment should be educational and peaceful. For good learning of child, school environment should be mixture of social value, culture, and education, friendly behaves, safety, practice and organized structure. The relationship among administration, teachers, students, parents is also responsible for good learning school environment for students. In school, students need to feel secure and positive. Teachers should possess all qualities of good teacher. There should be healthy relationship among teachers, students and parents.

The school environment plays an important role to decide the future position of students and their lives. The teaching activities and extra-curricular activities conducted in the school come with in the school environment. There should be rules and regulations to be followed by teachers and students to build their bright career. Students should be regular in school for better achievement. Discipline of students is also responsible for good learning. Teachers should provide counselling to students time to time.

The school is one km. far from the city area which is compounded with walls. So, the school environment is safe and peaceful. Learning facilities provided by the school are as follows:

Educational Tour

The school organizes educational tour for field study every year. The tour is for primary level to secondary level. The cost of tour is afforded by the school and

few from students. As the school provides support to poor students, there is an equal opportunity for each student to participate in the tour. So, students have the experience of the field study which helps to enrich their knowledge.

Teachers Guardians Meeting

Teachers, guardians and students play triangular role to enhance the better learning of students. The school organizes the meeting three times in a year as an occasion of providing progress report of their students. It is organized to let the guardians know about the achievement of their students, to share the weakness of students with the guardians and home environment of students with teachers. It is a triangular discussion which helps better learning of students. Such kinds of activities help parents to know the reality about the school.

According to the class teacher and head teacher, the presence of guardians of DCL students is nominal than that of non DCL students. The reasons behind it are that they are busy at their work and they have less interest on their students education.

Library Service

Library is important organ of the educational institute to promote the students education. To improve on the achievement and to empower the mind of the students, it should be compulsory in every school. But library has just opened in this school. So students are just using library. It is in practice now.

Cafeteria

Cafeteria service is also important for students. Food ding is basic needs. If we are hungry we cannot concentrate our minds in learning. The school has one cafeteria. It is not expensive as it is hired by school for teachers and students. Most of the

students do not bring breakfast from home and they take tiffins at cafeteria but DCLs do not go there as they have no money.

Drinking Water

Drinking water is sufficient in the school. It provides pure drinking water. It was financed by an American donor. The water filter system has 2000 litres capacity of filtering water every day.

Financial Support

DCL students are poor. They lack money to buy books and stationeries for their study. There is no support for DCL students from school. The government provides scholarship to poor and hardworking students, females, dalit students. The school announces application for that. Also the class teachers are asked to collect the names of needy students from the respective class. Then interview day is notified on which the student should bring their guardians. Then the interview committee selects the name of appropriate students. According to head teacher, it helps those students to carry out their studies. Besides, NGOs like ABC Nepal, CIWISH help some needy students for admission, uniform, books and stationeries.

Sport and Extra-Curricular Activities

Sport is the most important part of human life. It helps the students to develop their mental, physical and co-ordinate skill. It also helps them to obey the rules and regulations. It develops co-operation, brotherhood, friendship within competitive environment. It develops team spirit and leadership capacity in a person. The school lacks playground. It does not organize sport programme but allows students to participate in volleyball, football, race etc.

Medical Service

Health is an important part of human life. A person can work well mentally and physically only if he/she is healthy. Sick people become physically weak. On the other hand, they can not concentrate on their study. So, school should be aware of students' health. But in school, there is only primary treatment. There is no service for regular check up.

Extra Class

Through CIWISH, Australian teachers have been providing extra classes for financially poor students. It is run for students of grade VII and VIII for six months. There is no such class from school.

Counselling Service

The school has appointed a lady teacher to provide counselling services to students who are harassed by their house owner. It is basically launched for DCL students. The teacher has been trained by CIWISH for uplifting the life of DCL students. Through counselling, she explores the problems they are facing and provides remedies by convincing the house owner and in some case she draws the attention of school administration to shift her residence and the school works out for that.

Children's Club

The children's Club was established in 2057 B.S. with the major objectives to protect children's right and child violence, to develop group attitudes, to conduct extra-curricular activities. It aims to uplift the socio- economic condition of DCL students and enhance their learning activities. It has formed a committee of 9 members consisting students of all levels especially lower secondary and secondary level. Bhim Prasad Ghimire, a secondary teacher of Nandi Secondary School is the

patron of the club. It organizes extra-curricular activities like drawing, spelling context, poetry, debate competition in the school and also carries out public awareness rally on the occasion of Children's Right Day and International Environment Protection Day.

Classroom Observation of Respondent Children in the Case School

As a part of research I observed respondent students in the classroom of grade V for 15 days. For that I prepared guideline mentioned in appendix I. The class consisted 40 students out of which 25 and 15 were DCL and non DCL respectively. They were from different geographical regions and castes. They were scattered randomly in the class. The teacher as usual entered in the class with a greeting and the students responded her. Most of the time, she revised previous lesson before she started the new lesson. She used materials to explain the concept of the lesson. She applied student centred method and kept all students active throughout the period. The students actively took part in answering the questions asked by the teacher. The teacher equally responded the curiosity made by the students. The relationship between the teacher and students was good. She conducted class discussion on which most of the children took part actively. The involvement of students in class work and home work was satisfactory. She even asked students to practise problem on whiteboard. But the classroom was not controlled well in the sense that discipline was not well maintained. Students often made noise. According to the teacher, *"The students are less interested in the last period. They feel hungry and tired and want to go back home rather than to study."* The teacher used different teaching methods like lecture, discovery, question answer, inductive etc. There was enough interaction between teacher and students but was partly disturbed by noise.

The respondent children Madav takes mathematics as an easy subject. He loved doing mathematics. He looked active in the class and participated in class discussion and work. The teacher said, "*He is less active in grade V than that of IV because he is planning to go home.*" He missed homework once during the observation period. Jyoti Lama who was ranked as second position in class thinks mathematics as a difficult subject by nature. She involved in class work and homework actively. She was a regular student and submitted homework as well. She also looked active in the class. She had a good learning environment at home. Gita Chaulagain was found to be the most struggling for study as her home environment is not favourable for her. She takes mathematics as the most difficult subject. She looked passive in class. She did not actively involve in discussion and class work in spite of the teacher's encouragement. She was irregular in doing homework. The researcher found that she skipped homework three times during the period. Pramod also took math as a difficult subject by nature. He was not active in class. He partially took part in class discussion and missed home work two times. He was poor in math although he practised at home.

In the course of observation, I observed the class on the topics: place value table, subtraction, simplify bar graph, exercise on Currency, multiplication and division of algebraic expressions, measurement of angles. The researcher observed difficulties faced by the students in both class work and home work. They were as follows:

-) Difficulty on counting according to place value system. (Place Value Table)
-) Difficulties on subtraction with carry over. They subtract by taking carry over but forgot to subtract from the previous digit. (Subtraction)

-) Problems on using brackets while doing simplification. (Simplify)
-) Confusion on choosing number line vertically or horizontally? (Bar chart)
-) Dilemma on transferring rupees into paisa and vice versa. (Currency)
-) Problems on using + and – in algebraic expression.

It was seen that difficulty depended up on the level of students and faced differently. Difficulties were comparatively less in classwork than that of homework as the students had access to talk with their friends and also got teacher's guidance in class work. Among the respondent children, jyoti Lama had to face minimum difficulties whereas the rest of the students faced all problems mentioned above. Home environment and pre-knowledge greatly affected their study.

Case Study of respondent students

Case Study- I (Sarita Magar)

Sarita Magar was born in Kalikot. She has become domestic child labour for study because her parents can not afford her study. She was keeping her study up together with working for small household works. Her responses are given below:

I do not get enough time to study as well as to do my homework. My employer says that I have to work rather than to study. I am often disturbed from study by asking me to work. I do not have enough clothes to wear at home and get different food to eat. I get little time for study which is not sufficient for my study. I sometimes get support from the house in doing my homework. I do not get real love from them. They pretend to love me at home at the time of my father's arrival but I am punished later and threatened me not to send to school.

The teacher behaves and treats us equally in class. I find the relationship with my peer group is friendly. They never discourage me in study and personal life style. She gets equal support from them. I feel more comfortable at school than that of home. The teacher loves us and encourages by saying that we have to study. As there is no discrimination, quarrel, prejudices among non DCL students, I find their behaviour quite healthy and friendly. There is enough interaction between DCL and teacher regarding subject matter and personal life history. I think the teacher is my real guardian. I share my problems with the teacher and then to the class teacher through her. The teacher helps to minimize my pains by talking to the employer. I think mathematics is difficult subject than others because of less practice at home, unavailability of instruments and discouraging home environment.

From the above facts, I concluded that home environment of DCL is not favourable and encouraging for study. They have to be busy in household works all the time and psychologically they are insecure from the behaviour of employer. On the other hand, school environment is quite encouraging for them. The teacher plays the role of real guardian and encourages them to study. Here, according to the theory of cultural discontinuity, Ogbu (2000) argued that due to the cultural discontinuity between home and school, children face difficulties in learning mathematics. Environment of home and school affects learning of children. To sum up, the discontinuity between the culture of home and school (home and school environment) does not support the learning of DCL students. At the same time, Vygotskian constructivism theory emphasizes that knowledge is socially constructed. Social interactions influence on the nature of knowledge being constructed. DCL does not

get rich social environment, they have no chance to interact with people out of home and even they have less interaction at home. So they are poor in constructing knowledge through their own capacity. As a result, they face problems in learning mathematics. So, home environment, school environment, guardian's behaviour, behaviour of society and teachers play important role for DCL in learning mathematics.

Case Study-II (Jyoti Tamang)

Jyoti Tamang was born in Jharlung, Dhading. She has 9 members in her family including parents, one elder brother, two elder sisters, one younger brother, two younger sisters. Her main purpose to become a DCL is to study well. She came here as per the advice of her parents and brought in city by her relative. She responded to the questionnaire prepared by the researcher in the following way:

My economic condition of home village is good. I have got good home in Kathmandu. The employers treat me well just like their own children. I have enough time to study. I have also enough books and stationeries. I am often helped in her study by the employer uncle, aunt and brother. They always encourage me to study. I do have separate reading room.

To me, mathematics teacher is good. She teaches well. Students understand well. I have got 3rd position in class. There is no discrimination among students as DCL and non DCL in the class and outside of the class. So the relationship is friendly among students and teacher. The teacher often encourages all students to study well. Sometimes she tries to understand the life history of students and provide counselling

for those who are having home problems. So, I think math teacher is an ideal teacher in the school. I agree that the nature of math is more difficult than other subjects. I practise math less than other subjects. I often face problem in 'Division' in math class. Tamang language does not interfere her learning math as I did not learn it. It is different in spoken form and the way of learning mathematics is same.

Jyoti's home environment is good for study. She gets good support from the family members and there is enough interaction in the family. She has been treated as a family member. She is facilitated with books and stationeries. Similarly, school environment is good for study. Her math teacher is an idle teacher. The teacher provides good learning environment in class. Here, again according to Ogbu theory of discontinuity (2000), there is no difference between home and school culture of DCL. So, learning mathematics results in success. Jyoti's got 3rd position in class.

Case Study – III (Pramod Chepang)

Dipendra chepang is from a Chapang family. He was born in Bhalasdanda, Gorkha. He has home and land but does not know whether it is sufficient or not. The researcher interviewed him and the responses are given in box below:

My economic condition of home is good. I have got good home environment to study. The employer encourages to study and helps in difficulty in study. I have got enough time to study and do homework. I am facilitated with basic needs and books and stationeries. The employers care and love him much and I have time to study as per my will.

My school environment is good to study. The teachers and peer groups behave and treat me well and equally. I do not feel inferior as a DCL and a member of Chepang

family. There is good relationship among all students. My math teacher is good. She is helpful and always encourages to study. I feel mathematics as a difficult subject. I can not learn math quickly. I am a slow learner in mathematics. I forget math problems quickly even though he practises well. I generally sit in middle bench as per my will and sometimes feel disturbed by my friends' noise in the class. I feel more difficulty in 'division' in math class. I think that math is difficult by nature. Chepang has their own language but I never learnt it. So, it does not have interference in learning mathematics and other subjects as well.

Although there is no discontinuity between home and school environment, DCLs have to face difficulty in learning mathematics due to individual capacity in learning. They lack pre knowledge and become slow learner in mathematics.

Case Study –IV (Madav Khanal)

Madav was born in Ramechhap district. His home economical condition is not good. As per his interest to study, he came here through his relative to work as a domestic child labour.

I feel sad while studying with working. Now, my home environment is not favourable for me to study in comparison to his village home. I do not get enough time to study. Books and stationeries are not sufficient for me. I have no specified time to study and do homework. I am often disturbed by asking to work. The employers do not treat me well. They do not really love me. The employer sends me school regularly except in urgent work. My parents do not visit me but I am allowed to go back home to visit them twice a year.

I find school good enough to study. Teachers treat equally to all students. There is no

discrimination between DCL and non DCL among teachers and students. I like the way math teacher encourages to do home work, class work. I think math teacher is very good. I enjoy learning maths. Maths is my best subject. I think mathematics is easier than other subjects. I love practising mathematics. I have no problems in learning mathematics in the class but I sometimes feel disturbed by my friends as they make noise. I wish to have some more extra books and instruments to practise mathematics.

DCL's life at home is very difficult. Most of the time, they work. They are not provided with books and stationeries in time. They have less interaction with family members. So, there is discontinuity between home and school. As a result, they have poor performance in learning mathematics satisfying Ogbu's theory of cultural discontinuity (2000).

Mathematics Teacher's View Towards DCL Students

Bhima Adhikari teaches mathematics in grade 7. She has been teaching for 7 yrs as a basic level teacher. She is from Dailekh district. Her qualification is I, ED. She is a trained teacher.

According to her, non DCL students looked confident and active to learn than DCL as they looked tired and lazy in class. She agreed that they lacked time to study at home. They learnt math slowly as they lacked pre knowledge and had bad home environment. But she felt that DCL were more interested to learn than non DCL. She maintained equal relation among all students. She gave more sympathy to DCL students. She had attempted to teach DCL separately. For that she formed group at the beginning of the academic session but it did not work out long as the students did not

stay in specified group. Now she was teaching together. She said that their guardians had not come to school to talk with their students' performance in mathematics yet. There was equal involvement of all students in class work but DCL students did not do home work very often because they said that they had no time to do home work at home.

Regarding her teaching problems, she said that she taught math at last period. She could not control the class and took the full attention of students. On the other hand, they were almost tired and hungry as DCL did not bring tiffin from home. She also said that DCLs were from different districts. So they had different level of knowledge and regional culture. So they felt difficulty in learning.

From the point of view of teacher, the affecting factors were less time to study at home, last period, go without breakfast, discipline, different tradition and culture and lack of pre knowledge.

Guardians' view

With the guidelines mentioned in appendix-III, the researcher interviewed the respondent children's guardians whose views were given below.

Niraja Sapkota was the guardian of Sarita Magar. She was a house wife. According to her, instead of some house hold works to do at home, he had been given time to study but he preferred playing rather than study. He was provided with books and stationeries. Her son studied in grade 10 who supported doing homework for the DCL. She treated Sarita as a DCL and gave more preference to her son education than the DCL.

Suchitra Shrestha was the guardian of Jyoti Tamang. She worked in media. He had flexible work load and the family members work together with him. He had enough

time to study and do homework. He had specific time to study from 4 pm to 6 pm but he rather liked playing. He had got guidance in his study from the family members especially from his son. Text books and stationeries were enough for him.

Karuna Banjara was a Christian and works in church. She treated Pramod Chepang as her member of family. She had given equal facility as her only one son. Pramod had enough study time and she did so. Her son assisted her in homework and provided guidance in her whole study. She was ready to provide anything needed for her study. She was planning to create extra study opportunity like tuition and extra classes to upgrade her study.

Ram Bahadur Bhujel was a retired SSP. He was the guardian of Madhv Khanal. In the course of his service, he took her his home as per the request of her family. She had been staying with him for 3 years. According to him, she did household works in the morning and evening. She was provided enough time to study and helped in her study including home work. He had also bought books and stationeries for her. She had also given training of beauty parlour at home as the family members were running it. By taking the views of Mr Bhujel, the researcher did not satisfy with him as he hid information regarding the DCL in one hand and on the other hand, he provided false information. Through the head teacher and other teaching staffs who closely know him and also the researcher's own observation, Madhav Khanal is true what she said.

Non DCL Students' View

There were 70 students in grade V out of which 36 students were DCL. The class was the mixture of different castes and they came from different districts of Nepal. There was no discrimination in terms of DCL and Non DCL in class and they co-operated each other. The responses of peer groups were given below:

Yubaraj Bhandari was from Dolakha and had been living with his parents at Mahadesthan for 5 yrs. He was 12 years old and had 3 younger brothers. His parents worked in Road Division. According to him, he recognized DCL students in class. He made friendship with them. He played with them. He sometimes helped them in study. He knew that they were poor and so loved them. Sometimes he gave pencils and other stationeries when they lacked it. His parents had also positive attitudes towards DCLs and treated them equally. He enjoyed maths class even though he thought math a difficult subject. He practised math at home but often found the problems difficult. He found his teacher treating all students equally.

Rita Rai was 15 yrs old who came from Dharan and staying in Koteswor with her parents. She had got one elder sister and brother in law and one younger sister. Her father was carpenter and mother sold vegetables. According to her, she knew DCL students in class and had conversation with them. She never quarrelled with them, instead she loved and cared them as they were poor. She said that they were good at study but sometimes lacked stationeries. She helped them in such matter and sometimes she paid for breakfast in canteen. She found her math teacher active for good learning. Math was a difficult subject for her. She practised math less in comparison to other subjects. She thought the nature of math was difficult. Her parents had no discrimination among DCLs.

Ramshran Upreti was from Kavre district and he was living with his parents at Mahadevsthan. He had got 3 elder sisters and one elder brother. His father worked in Civil Home and mother a house wife. He recognized DCL in class and had friendship with them. He helped them in teaching English in class and gave pencils, erasers etc. He took math as a difficult subject. He said that the teacher asked them to do self in copy and board, his friends made noise in class. He always sat in middle bench on

window side as per his will which made him difficult to see on white board. He found the problems with 'Division', 'Simplification' difficult.

Ranjeeta Ghimire was 12 years old and she was from Shankawasava. She was living with her parents at Jadibuti. She had got one elder sister and brother. Her parents ran a hotel. She knew DCL in class. She thought they were poor and wanted to help them. She made friendship with them. She helped them in study. She went to canteen together and paid for them. She gave pencils. She took math as a difficult subject. She did class work and homework. DCLs also involved in class work but sometimes they did not do homework.

Section II: Influencing Factors of Learning Mathematics

In this section I deal with second research question and to accomplish the second objective, I interviewed with DCL students their parents and their teacher and observed students' activities to collection the information. There are many factors influencing learning mathematics of DCL children. This section focus on the factors influencing in learning mathematics which I have themetized below:

Economic Condition of the Family

In Nepal there is a vast gap between rich and poor people. The gap is getting expanded because of the fact that rich are being rich and poor are being poor. In Nepal 31% people are living in poverty. In Nepal domestic child labour is practised in most cities. Among them kathmandu being a capital city supports a good population of DCL children. According to the survey of NIDWU in 2007, there were 2 lakhs DCL in Nepal out of which 20 thousands in Kathmandu and 15 thousands in lalitpur. One of the respondent students said,

"My home economic condition is poor. My parents work as a day labour. I left home as per my father's suggestions- Gita Chaulagain"

Similarly, another said, *"My family income is not sufficient for the family. My parents' occupation is agriculture. So I left home to study as per my will-Madav."*

It shows that economic condition was one of the pushing factors to become DCL. As a result, they could not carry out their study normally as they were supposed to work at home and only little time could be used in study.

Size of the Family

It's true that the size of the family plays an important role in the welfare of the family members. The more the family members are, the more economical expenditure is. The average size of the respondent students was 8. So, I concluded that the economical load for their children's study was more. On the other hand, the family had poor economical condition which lead the children moved away from village and affected their study including mathematics.

Bad Attitude of the House Owner

It is said that home is the first school and mother is the first teacher of a child. But DCLs were living in a different world where they lacked own home and parents. Psychologically, they felt insecure towards their existence. They became more helpless and miserable if they were treated badly by their employer. Study in such a situation was almost nothing. One of the student respondents said,

"I am harassed both physically by beating and going with out food and mentally by threatening. It happens to me almost daily. I want to leave the place- Gita Chaulagain." Another said, " I can not carry out my study with

working. The employer does not love me really. I am often disturbed in study by asking to do some kind of work. I am often scolded for minor mistakes- Madav."

It shows that DCLs had to be suffered from the bad behaviour of the house owner which badly influenced their study.

Heavy Work Load

DCLs were employed at home primarily to work, then to study. Those who wanted to study with working were spoilt by heavy duty of the house. Most of the time, they were working. They hardly got rest time. They were often disturbed while studying by asking to work. One of the respondents said,

" I have to work rather than to study. I work 10.5 hrs a day. I have to work in sickness and injuries. I am often asked to work whenever I start reading at home- Gita Chaulagain." Similarly, Maheshwor said, "I have no sufficient time to study. I am not given specific time to study." The mathematics teacher, Bhima Adhikari, said, "They have less time to study at home and they also do homework irregularly."

From the above conversation it is clear that due to the heavy work load, they have no enough time to practice mathematics and do homework. It also affected their learning.

Unavailability of Books and Stationeries

Books and other instruments were necessary to start learning of any subject for school children. Its importance was higher in mathematics. To start and understand their lesson, students must have sufficient books and stationeries in proper time. In DCL students' case, they were supposed to work at home and instead the employer

paid for their study and books and stationeries. But unfortunately DCL were not getting it in time. According to Gita Chaulagain,

"I do not get books and stationeries in time sufficiently", Similarly, other participant said, *"I have no sufficient books and stationeries."* This fact was further supported by their peer groups and they said, *"We give pencils, erasers to DCL students."* From the above information I found that DCL students often lacked books and stationeries which affected their learning.

Discipline of the Class

Discipline plays a vital role in teaching learning activity. It is equally important for both teachers and students and must be maintained in class by each. In one hand, a teacher always wants discipline from his students. On the other hand, it teaches students to speak truth and follow rules and regulations. So, it is a key to success. But the respondents said,

" Students often make noise in class. It disturbs us from hearing the teacher." On the other hand, the teacher says, *"My class is on last period. Students look tired and hungry as DCL students do not bring breakfast from home. They want to go back home rather than to study. I can not concentrate their full attention."*

The teacher further agreed with the point that her class was much disturbed and uncontrolled which was one of the affecting factors in learning mathematics.

Different Traditions and Cultures

Obviously school is the mixture of the students of different castes, cultures, traditions, geographical features etc. DCL students came from different districts and so had their regional characteristics. According to the mathematics teacher, it was difficult for her to create learning environment in her class due to the different

learning behaviour of students. So it was a big challenge for her to keep individual balance in her class which also affected their learning.

Pre-Knowledge

Regarding the children's learning, Cognitivist believes that sense impression is the primary source of knowledge. It becomes knowledge only when the mind systematizes it. So, intellect is taken as the prime source of knowledge. They further believe that pre- knowledge is a pre- requisite to effective learning. According to the respondent students,

"Mathematics is difficult subject. The nature of mathematics is tough. The problems of mathematics are difficult." On the other hand, the teacher says, "The students come from different background and often lack pre- knowledge. So, teaching is difficult."

In the above information I came to know that the nature of mathematics is difficulties faced in the classroom showed that learning mathematics was difficult in this class due to the lack of pre- knowledge

No Alternatives Except for Being Satisfied with Minimum Facilities

Shila, aged 13, originally from Surkhet, is studying in a public school of kathmandu grade 7. She was sent by her mother to Kathmandu before five years for better education and other opportunities. She receives no remuneration at all. Instead, a meager amount (Rs. 500 to Rs, 1000) is occasionally given to family members including a set of clothes once a year. Her mother has contracted orally to provide education and accommodation only. She is living in a house of an Ex-British Army and does almost all household chores from early in the morning to late evening.

She has taken part in different activities from the school like a procession against the abduction of children, programs against child labor organized by CWISH, and elocution competition. However, she seems happy and says, "It is good for me that my employers have allowed me to go to school. They have given me proper lodging and food. But, sometimes, I like to go home to meet my parents. I cannot go as I desire. Even in main festivals, I don't go to home. I went home the year before last year.

From the above story we can deduce that a compelled girl has devoted her full time as a domestic labour on the basis of informal oral contract and agreement. In return she has got mere survival and schooling. There was no remuneration and any other incentives except for meagre amount of money for her family members at home occasionally hardly once a year. At the time of devoting her full time for the enhancement of her overall development and to pursue her happiness she has to live at the pity of her employers. Nevertheless the permission to go to the school and to take part in co-curricular activities actively can be seen as a ray of light in the pitch darkness of her life. On the other hand, we came to know that the child domestic worker like Shila has been confined at the employer's home with heavy work load. There was compulsion of being away from parental love and care.

Public Awareness

Public awareness was the main focus of the program of municipality. The major aim of public awareness was to inform or educate community people about issues of child rights. The focus of awareness was to eliminate child labor. In this regard, one of the parents said;

"We have been conducting different programs for the welfare and betterment of children such as awareness raising programs. We have been attempting to aware the public on child rights in order to protect the children from child labour."

In the latest years, the main focus of program was to build public awareness. In doing so, the municipality has been organizing a number of strategic programs commitment campaign for getting the commitment of the public on reducing child labour. Rally and Door to Door Visit were organized to raise awareness on the issue of child labour at community level. This program also attempted to promote the rights of Adult Domestic Workers and to emancipate Child Domestic Workers. The hand bills on child labour were distributed along the visit. Media interaction with stakeholders and face book campaign were key strategic programs the aim of which was to reach out to mass and create awareness on the issue by posting different photos and slogans on child labour. In addition, the municipality has attempted to create public awareness through informative booklets, pamphlets, posters, slogans, and printing in the daily useful official envelopes and files.

Chapter- V

FINDINGS, CONCLUSIONS AND IMPLICATIONS

In this chapter, it gives a brief account of what was carried out in the study. It discusses the findings of the study. It also presents the conclusions and implications of this study.

Findings

The major findings from the study were as follows:

-) The school was providing education equally to all students with moderate physical facilities and qualified and experienced teaching staff.
-) The school had facilities of library, canteen, and pure drinking water services.
-) Poor economical condition and large size of family forced the children to work as a DCL. They came into city as per the advice of family in the hope of getting better education.
-) The home environment was not favourable for them to study. The attitude of house owner was not kind, loving and encouraging for study. The family members were much strict and wanted to keep DCLs busy all the time. They had to be victim of physical punishment and mental tortures.
-) They often lacked books and stationeries, clothes and good food. They were given heavy duty so that they got very little time to study. Their study time was not fixed and often disturbed by asking to do some kind of work.
-) They took mathematics as a difficult subject in comparison to others. They were more interested in mathematics than non DCL students but felt difficulty in learning due to the lack of pre-knowledge and less time to practise at home.

-) They felt more comfortable in school than at home. Comparatively, they looked more tired than non DCL children. They often came to school without breakfast. But they were curious to learn.
-) There was healthy relationship among all students and teachers; no discrimination had been found so far.
-) Regional traditions and cultures were to be dealt in class.
-) Teaching materials were used in mathematics class.
-) No special teaching was done for DCL students.
-) There is no special support for DCL students from school except counselling service and children club.
-) Non DCL students are co-operative to DCL students in class. Questions and responses are common among students and teachers.
-) There was equal participation in class work, group discussion but DCLs were irregular in home work.
-) DCL students faced more difficulties in homework than in classwork.
-) Difficulties faced by DCLs were found in the level of reflecting the concept. They understood the concept but forgot very soon.
-) The major factors affecting the learning of DCL students were: economic condition of the family, size of family, bad attitude of house owner, heavy work load, unavailability of books and stationeries, discipline of the class, different traditions and cultures and pre- knowledge.

Conclusion

The major findings of the study show that DCLs are having unfavourable home environment but feeling more comfortable at school. They have difficulties in learning mathematics connected to home environment and school. On the basis of field study and findings, the following conclusion has been derived:

-) Most of the teachers were well qualified, experienced and trained, so teaching is satisfactory in the school.
-) The main purpose of DCL was to study and girls are more than boys.
-) The home environment was not favourable for them to study.
-) Mathematics was difficult subject for them to study.
-) The relationship with non DCL students and teachers was healthy.
-) No special teaching was done for DCL students.
-) More difficulties were found in homework than in classwork.
-) Participation and interaction in class discussion was good.
-) The major factors affecting the learning of DCL students were: economic condition of the family, size of family, bad attitude of house owner, heavy work load, unavailability of books and stationeries, discipline of the class, different traditions and cultures and pre- knowledge.

Implications

Every research has implications in different sectors. This research has following implications:

-) It is helpful for every teacher to understand how the DCL students help in teaching – learning Process.
-) It helps to improve the performance and participation of the DCL students in classroom.
-) It is helpful for teachers, students, researchers, institutions, educationist and policy makers.
-) To enhance cooperative learning in teaching mathematics at school.
-) To promote the student centred approach in classroom.
-) For develop the friendly relation between school and home.
-) It helps to teach by using DCL friendly approaches.
-) To enhance equality and equity in mathematics classroom.

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Appendix- I

Class Observation Form

Name of School:

Date:

Name of teacher:

Location of

School:

Total no. of Students:

Year:

Period:

Subject:

S.N.	Activities Observed	DCL Students	Non- DCL Students
1	Response to the question asked by the teacher		
2	Response to the responses and the questions of students by the teacher		
3	Participation on class division		
4	Encouragement and motivation of teachers to the students		
5	Participation on class work and homework		
6	Involvement on group work		
7	Guidance and feedback of teacher		
8	Teaching methods used		
9	Teaching behavior of teacher to DCL and Non- DCL students		
10	Interaction between teacher and DCL and Non- DCL students		
11	Relationship between DCL and Non- DCL students		

APPENDIX –II**Guidance for interview with DCL students**

Name:	Class:	Roll
No:		
Position in Class:	Sex:	Place of
Birth:		
Place to Residence:		
Topics:		

1. Opportunity to learn at home.
2. Teacher’s behavior towards them.
3. Peer group behavior.
4. Encouragement by teacher.
5. Relationship between teacher and DCL students.
6. Relationship between DCL and Non- DCL students.
7. Attitude towards Math teacher.
8. Interaction between teacher and DCL students.
9. Difficulty in learning math.

APPENDIX –III**Guideline for interview with guardians**

Name:

Address:

Occupation:

Caste:

Qualification:

Name of

DCL:

Topics:

1. Guardian's view about DCL
2. Learning environment provided.
3. View about the improvement of the learning of the student.
4. View about the education of DCL and his own children.

APPENDIX – IV**Guideline for interview with teacher**

Name of the teacher:

Qualification:

Working period:

Temporary/Permanent:

Topics:

1. View of math teacher towards the achievement.
2. Opportunity provided in classroom to DCL by the teacher.
3. Interest of DCL students in math learning.
4. Difference between learning behavior of DCL and non DCL students.
5. Relationship between teacher and DCL students.
6. Efforts being made by teacher to improve the achievement of DCL students.
7. Interest of guardians about the achievement of DCL students.
8. Participation of DCL students on math class work and homework.
9. Teaching problems/ difficulty faced by teacher in class.
10. Factors affecting in learning mathematics of DCL students.

APPENDIX – V**Guideline for interview with non DCL students**

Name: Class: Roll

No:

Sex:

Caste:

Position in class:

Topics:

1. Attitudes of non DCL students towards DCL
2. Their help to DCLs.
3. Friendship with DCL students.
4. Discrimination of their parents.
5. Their behavior towards them.
6. Problems faced by non DCL students.