

DIFFICULTIES OF DARAI STUDENTS IN LEARNING MATHEMATICS

A

THESIS SUBMITTED BY

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**IN PARTIAL FULFILLMENT OF THE REQUIREMENT
FOR THE DEGREE OF MASTER'S OF EDUCATION**

SUBMITTED TO

THE DEPARTMENT OF MATHEMATICS EDUCATION

CENTRAL DEPARTMENT OF EDUCATION

UNIVERSITY CAMPUS

TRIBHUVAN UNIVERSITY

KIRITPUR, KATHMANDU

2017

LETTER OF CERTIFICATE

This is certify that Mr. Ramu Kandel, a student of academic year 2069/070 with campus Roll no.1043, exam Roll No. 281198(2070), Thesis No.1112 and T.U. Reg. No.9-2-288-166-2007 has completed his thesis under my supervision for the period prescribed by the rules and regulations of Tribhuvan University, Nepal. The thesis entitled “**Difficulties of Darai Students in Learning Mathematics**” embodies the results of his investigation conducted during the period prescribed by the rule of Tribhuvan University, Department of Mathematics Education. I, hereby, recommend and forward that his thesis be submitted for the evaluation as the partial requirements to award the degree of Master of Education.

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ACKNOWLEDGMENT

I would like to my sincere gratitude to my research supervisor Assoc.Prof.Dr. Bed Raj Acharya, Department of Mathematics Education, Tribhuvan University, Kathamndu for this valuable encouragement, generous comments and continuous guidance during the preparation of this research.

I express my greatest gratitude to Assoc .Prof.Laxmi Narayan Yadav, Head of Department of Mathematics Education. I also gratitude to my respected teacher Prof.Dr. Hari Prasad Upadhyay Chairman of Mathematics and Computer Science Education subject committee for their valuable comments and creative suggestions while accomplishing this research work.

I express my heartily thanks to all my respected teachers of Department of Mathematics Education. Similarly I express my heartily thanks to mathematics teacher, case students, student's parents and head teachers of these three school(Chandi Devi Higher Secondary, Shiva Rastriya Secondary and Sarwajyoti Secondary School) who provided me their valuable time and appropriate environment to collect the data for this research.

At the same time, I want to memorize my wife Samjhana Sapkota and friends Shree Krishna Acharya and Laxmi Dahal for their encouragement and patience during my study.

Finally, I wish to acknowledge my parents for the invaluable contribution of my career and great patience and encouragement during my study.

.....

Ramu Kandel

Abstract

The main objective of this study are to identify causes of difficulties and strategies to address the causes of difficulties of Darai students in learning mathematics at Secondary Level. This research is qualitative in design with case study approach. The study site is three schools situated in Darai community of Vyas municipality-5, Tanahun, Nepal. There were altogether 18 participants in my study, which was taken by purposive sampling. Classroom observation form and interview guidelines to students, subject teacher and parents were used to collect data. Besides these, unstructured interview of selected students, teachers and parents had also taken to analyze difficulties.

On the basis of reviewed literatures and different concepts of theories used to analyze the collected information of the data of study. Then it was found that home and school environment are not similar for the mathematics learning of Darai students, Darai have their own traditional values, language, they are culturally dominant, parents involve their children in labour, Darai students have low physical facilities and materials, most of the parents are uneducated, lack of proper interaction between teacher and students, parents careless of their children education, lack of group discussion and lack of inter-relationship between other caste students are the causes of difficulties of Darai students in learning mathematics.

Ways to address the causes of difficulties of Darai students in learning mathematics, their parents should be regular visit in the school, there should be maintain home environment and school environment same, involvement more them in classroom activities, do not biased Darai people as well as their children in the school, emphasis in learning of Darai students, provide scholarship and equipments to the Darai students.

Table of Content

	Page No.
Letter of Certificate	i
Letter of Approval	ii
Acknowledgement	iii
Abstract	iv
Table of Contents	v
 Chapters	
I: Introduction	1-9
Background of the Study	1
Darai: An Introduction	2
Language and Religious Life of Darai	5
Economic life of Darai	6
Statement of the Problem	6
Objectives of the Study	7
Research Question	7
Signification of the Study	7
Delimitation of the Study	8
Definition of Related Terms	8
II: Review of Related Literature	10-19
Thematic Literature	10
Empirical Literature	11
Theoretical Literature	13
Conceptual Framework	18
III: Methods and Procedure	20-27
Research Design	20

Study Site	21
Identification of Participants	22
Sampling	23
Research Tools	23
Quality Standards	25
Data Collection Procedure	26
Data Analysis Procedure	27
IV: Analysis and Interpretation of Data	28-50
Difficulties Caused by Cultural Background	28
Difficulties Caused by Socio-economic Condition	32
Difficulties Caused by Parental Education and Involvement	35
Difficulties Caused by Interaction and Motivation	39
Ways to Address the Causes	43
V Findings, Conclusions and Implications	51-54
Findings	51
Conclusion	52
Implications	53
References	
Appendices	

Chapter-I

INTRODUCTION

Background of the Study

Mathematics developed from society. The history of mathematics education refers the contemporary society has served today's situation in the field of the society. Mathematics directly deals with human life. It is believed that the developments of mathematics and development of human civilization from the stone age of the modern world mathematics plays vital role. Historically mathematics in the initial stage was created to fill human needs. It was introduced later in formal education system. It had been developed simultaneously with the development of society of each time has also been practicing it with its own ideas and belief(Pandey,2014).

Mathematics is the language of physical science and certainly no more excellent language was ever created by mind of man. The usefulness of mathematics is perceived in different ways. For man it seen in term of arithmetic skills which are needed at home, in office on workshop on the basis of scientific development.

As a school subject, mathematics has a tremendous authority. Having difficulties with mathematics is a serious issue. Success or failure in mathematics at school has a decisive influence on choice of further education and career both with regard to access and necessary self- confidence. Mathematical competencies are of importance to life as citizen and private individual, social life and everyday life (Niss&Hojgard, 2007). Just like mother tongue competency, mathematics is associated with a basic literacy- and a corresponding illiteracy in case of its absence. It is a serious matter for a child not to be successful in gaining functional mathematical skills. This lack of success may have consequences for both the child's

perception of their own capacity to manage the challenges of schooling, and to their future education life (Lange, 2009)

The mathematical idea such as measurement, counting, classifying, etc. are created from the cultural activities of people which can be in different nature in different cultural base. Today, this cultural base mathematics is known as the term "Ethno-mathematics". D'Ambrosio who is called the father of ethno- mathematics has defined the term Ethno- mathematics in 1985 as this ways: "Ethno- mathematics as the mathematics practiced among cultural groups such as national tribal societies, labours groups, children of certain age bracket, professional classes and so on". The term Ethno- mathematics is used to express the relation between culture and mathematics (D'Ambrosio, 2010). It is a few idea of studying mathematical representation from different cultural perspective.

In the context of Nepal learning difficulties in mathematics is a serious issue. Through this research I explore 'Difficulties of Dari students in learning mathematics' towards learning mathematics at secondary level, which consequently affects their learning strategies. Every student may have a variety of difficulties. However, these difficulties are not systematically managed so that I am interested to find out these difficulties which have direct burning issues on learning mathematics of Darai students.

Darai: An introduction

Darai is one of the nationalities of Nepal. Darai is an ethnic group. Darai is one of marginalized group of indigenous nationalities in Nepal. They are the indigenous people of Nepal since long. Total number of Darai ethnic is 14,859 in Nepal, according to Census 2001. Most of this people live in Chitwan, Tanahun, Nawalparasi, Gorkha, Palpa and Dhading in the area of western and central of Nepal.

In a few studies is reported about the origin of Darai. They are known by Daroe, Darhi, Daraie, Darad and Darai. Darais are Mongolian stock with short stature, depress, nasal ruts and they have stumpy nose. They display great health and strength. Darais are economically poor and the literacy rate is low and their communities and their livelihoods totally depend in traditional agriculture. Although Darais are agriculturalists lacking specific skills to carry out other special jobs. Men and women both work in the field and keep cow, sheep, goat and hen at home. Most of the women prepare beer (wine) called 'Mod/ muna'. They take that wine as breakfast in the morning and in the evening. They respect their guests having the wine in Darai society. They worship separate from all others and they use the wine for worship. They are different from other ethnic group's tradition. They have their own language, custom, religion, traditional unwritten history. They worship natural things as god and goddess. So they say that their religion is naturalism (prakritipujak).

Many years ago Darais were owner of the large land but nowadays more than half of Darais people are landless. They are unemployment. They have no any other income except agriculture. They have no good skills to earn money and to serve their lifestyle. Children go to the school and some parents are not careful completely that their children need good education. And their socio- economic status is not strong which most problem of Darai community is. Low literacy rate of education a large number of Darai people are unemployed. Due to lack of the job Darai women spend days without doing anything at home. Sometimes they used to forest for woods and pick vegetables up in so it affects this society day by day(Mishra, 2015).

In order to solve social problem as a whole man, women and youth have emerged among Darai communities in order to preserve the socio tradition of Darai people. Darais are not getting any changes from government as well as they need

because they are not approached to get facilities for developing Darai community. So their issues are all but invisible to many people, and their rights are abused. Thus, Darais are being backward and difficult to survive their lives hood. From Darai society they have own language, festivals, distinct identity, traditional rites and festivals are going to be slowly. It is necessary to support them in claiming their rights, identity and protect their lands, language, and cultures(Darai, 2015).

Giving below is the data of Darai people:

S.No	District	Male	Female	Total
1	Chitawan	3,781	4,230	8,011
2	Tanahun	1,852	2,266	4,118
3	Nawalparasi	938	1,118	2,056
4	Gorkha	380	453	833
5	Dhading	373	445	818
6	Palpa	65	66	131
7	Bardiya	39	53	92
8	Rupandehi	42	46	88
9	Kaski	42	40	82
10	Banke	8	11	19
	Total	7,520	8,728	16,248

(Source: National Population and Housing Census-2011, central Bureau of Statistics, Thapathali, Kathmandu-2013)

From the above table we can say that Darai population is also increasing day by day. They are still back in education, economical and industrial sector because they do not want to lose their own culture and traditions. They are enjoying in their own tradition until now.

Learning affected by the cultural phenomenon. The different ethnic groups have their own culture that causes the difficulty in learning. In similar way Darai has their own traditional culture and children of Darai are highly affected by their culture. So through this research I analyzed the difficulties of Darai students in learning mathematics.

Language and Religious Life of Darai

Darais are early settlers and considered indigenous tribes of Nepal. They are the main tribal inhabitants of Chitwan and Tanahun district living close to the dense forest area and in the river valleys of the inner Terai. There is not any precise proof concerning the origin of Darai people. Diverse historians presented their wide-running views regarding the origin of Darai.

In accordance with the folklore, earlier Darai people had small kingdom located at Darbhanga now it is the district part of Bihar state, India. Myths reported that after Muslim invader, they arrived to Nepal and these people were so much afraid from the war that Daraya in Nepali word which was changed into the name Darai. Like, Darai people have seemed to be more or less pronounced the Mongolian feature. Of course, they are honest, docile, and hardworking people. Pyakurel, 1982 also depicted in his literature that Darais are innocent, shy and relatively timid people. Bista, 1972 mentioned in his book "Peoples of Nepal" Darai people lives in hot, wet and malaria area, are reputed to have grown immune to malaria(Mishra, 2015).

Darai have own language but all the Darai do not speak Darai language. It is not more spoken as their family language in some of their settlements and nepali has taken its place.

"Chudka and Ghatu" are their own traditional dances and are mainly practiced in the mountainous Darai society. "Sohorai" is their traditional tomb-sweeping day

when they dance and sing in memory of their recent dead. They practice devotional meditation involving their deceased ancestors(Darai, 2015).

They profess Buddhism. They light candles and offer home-made alcohol and rice on banana leaves to their ancestors. No doubt, they practice Hindu festival (Darai Rajendra).

Economic life of Darai

Truly speaking, Darai economy is subsistence economy following their traditional and non-traditional source of live hood; throughout years they work hard to meet their daily needs.

Agriculture, Animal Husbandry and Wage Labour

The economy of Darai is based on principally in agriculture, animal husbandry and wage labour. The Darai employ traditional implementations in their agriculture activities. They either go to nearby field to work as labourers where the wages are very low or they go to nearby town side where they works as non- skilled labourers, but get higher wages than in their village.

Due to the lack of enough land agricultural production, they cannot produce food for 3 months when they become busy for 1 full year in agriculture. Most of Darai families are yet to conceive the idea of family budget. Due to the lack of this knowledge, the money earned has spent immediately. Moreover, they spend a lot on religious formalities, festivals and merry making and drinking. Lack of stable and fixed family income is also not allowing them to develop the concept of family budget and run the household accordingly(Mishra, 2015).

Statement of the Problem

Through my own experience of teaching at Shree Shiva Secondary school, Vyas- 5 Damauli, during my practice teaching of B. Ed. I had came face with the

problems of learning mathematics subject among the students of secondary level of Darai students. The overall performance of the students of this school in mathematics is average. However, among the students of the school, the students from Darai ethnic background have very miserable mathematics performance. Therefore, statements of the problems are follow:

-) Why mathematics learning is difficult to the Darai students?
-) How can we address the difficulties of Darai students in learning mathematics?

Objectives of the study

The objectives of the study have follows:

-) To explores the causes of difficulties of Darai students in learning mathematics at secondary level.
-) To address the causes of difficulties of Darai students in learning mathematics at secondary level.

Research Questions

The following research questions are used in the study:

-) What are the causes of difficulties of Darai students in learning mathematics at secondary level?
-) How can we reduce the difficulties of Darai students in learning mathematics at secondary level?

Significance of the study

Achievement has become an area of interest in educational research. In the modern world, mathematics is being increasingly used in science, technology, social science, education etc. hence, it has been considered as queen and servant of all science. The mathematics teacher can teach mathematics by applying modern

technical devices and more effective method. The study of this type would be helpful for:

-) Its finding will help to improve the achievement in mathematics of Darai students.
-) This study would be helpful to do good behavior towards Darai students for: teachers, parents, and curriculum designers and educationist persons.
-) Our nation's leaders to act sufficient opportunity towards Darai students and act the slogan "Education for all".
-) Darai parents can create better learning environment to their children.

Delimitation of the study

The study had following delimitations

-) The area of my study was limited in Tanahun district.
-) The study was limited only to 6 Darai students of 3-community secondary school named Chandi Devi Higher Secondary School, Kumaltari, Shiva Secondary School, Dumsi and Shree Sarwajyoti Secondary School, Siwor.
-) This study was based upon the opinions of the secondary level students.
-) The data collection was limited to written set of questionnaire.
-) This study was limited only to school going Darai student's difficulties in learning mathematics.

Definition of Related Terms

Darai : An indigenous marginalized ethnic group of Nepal who are scattered in many districts of country. They are known by Daroe, Darhi, Daraie, Darad and Darai. They are economically poor and the literacy rate is low and their communities and their livelihoods totally depend on traditional agriculture.

Learning Difficulties: A general term meaning that a child (or adult) has difficulty learning in a typical manner because the brain has trouble processing information. A learning difficulty is not an indication of intelligence level, but it means the child will have trouble learning in the same way others do and may have trouble performing certain types of tasks.

Cultural Disjunction: Difference between the culture of home and school.

Literate: The word literate has been used here to indicate those people who can read and solve their general mathematical problems of daily life.

Illiterate: Illiterate are those people who cannot read, write and solve their general mathematical problems of daily life.

Chapter-II

REVIEW OF RELATED LITERATURES

The written review of literature presents an argument that justifies researcher choice of topic and the way researcher have chosen to address it. The purpose of the literature review is to situate the research in the context of what is already known about a topic. It need not be exhaustive; it needs to show how researcher's work will benefit the whole. It should provide the theoretical basis for the work, show what has been done in the area by others, and set the stage for the work. In a literature review researcher should give the reader enough ties to the literature in the field. It should probably move from the more general to the more focused studies, but need not be exhaustive, only relevant. A literature review is a body of text that aims to review the critical point of current knowledge including substantive finding as well as theoretical and methodological contributions to a particular topic.

This chapter describes the thematic, empirical and theoretical literature. At the end of this chapter, I have constructed conceptual framework of the study.

Thematic literature

The thematic literature helps to understand the concept clearly. So, I described the thematic literature under the following heading;

Mathematics and culture

Many students and teachers believe that mathematics is a culture free subject and fail to see that the connection between mathematics and culture (D'Ambrosio, 2001). Culture can interfere in the learning of mathematical concepts in the classrooms because mathematics has been created by a culture based upon their needs. Davidson (1990) found that the interaction of native culture and mathematical ideas can be mutually reinforced because the application of culturally sensitive mathematical activities can help students to see the relevance of mathematics in their

culture and help teachers to use this connection to teach more mathematics. In fact, if mathematics is thought of as the development of structures and systems of ideas involving number, pattern, logic, and spatial configuration and then examines how mathematics arises and is used in different cultures, then it is possible to gain a much deeper understanding of mathematics.

Mathematics and Constructivism

Constructivism has received considerable attention in educational enterprises. It emphasizes the importance of the learner's active engagement during the learning process. The learning constructs or generates meaning from his/her experience rather than passively receiving knowledge from the teacher constructivist believes that knowledge is not freestanding and context independent. They hold that knowledge is personally constructivism; learning is an active process in which learners construct new ideas or concepts based upon their current/past knowledge. In mathematics class teacher should change his role from telling and describing to listening and asking question to the students and students should change their role from listening and questioning to telling and describing (Upadhyay, 2001).

Empirical literature

It is a way of gaining knowledge by means of direct and indirect observation or experience. So, I have read and wrote the following documents;

Kadel (2010) noted that in “Mother Tongue Based Multilingual Education” Multilingual Education typically refers to "first-language-first" in education, that is, a child’s schooling begins in his or her mother tongue and later transitions to additional languages. According to June Jordan "You will never teach a child a new language by scoring and ridiculing and forcibly erasing his first language." At the beginning of education, mother tongue instruction is very important not only to develop a strong

educational foundation, but also to strengthen the cognitive development of learners. Unless the mother tongue is used in education, there is a big gap between the student's home and the school.

Shai (2010) did a research on "Factor Affecting Mathematics Achievement of Dalit Students in Mathematics: A Case Study in Doti District". He took six peer groups as his sample for the study. He used observation and interview schedule as the tools for his research. His finding show that the participation of the Dalit students is less than non- Dalit students. He also found that irregularity is one of the causes being Dalit students fail in the mathematics subject.

Rijal (2008) conducted a study on Difficulties in Learning Mathematics: A Case Study of Rana-Tharu Students in Kanchanpur District. This is a case study related to the difficulties and causes of difficulties in learning mathematics of Rana-Tharu students. The finding of this study shows that, there is a cultural difference and discontinuity at school and home. There is discontinuity in language, lack of interpersonal relation, no proper interaction between teacher and students. The home environment and school environment are not conducive for mathematics learning.

Akdemir (2009) made an article on the topic "Identifying Factor Affecting the Mathematics Achievement of Students for Better Instructional Design". This study was conducted to identify the factors affecting the mathematics achievement of students through collecting the opinions of mathematics department students. Results revealed that instructional strategies and methods, teacher competency in mathematics education, and motivation or concentration were three most influential factors. Here the writer taken junior and senior students in the mathematics department were compared in this study. Here the writers classified the affecting factor in three sectors: Demographic Factors: (gender, socio-economic status, and parents' educational level)

Instructional Factor: (curriculum, instructional strategies and methods, teacher competency in mathematics education, school context and facilities) and Individual Factor: (self-directed learning, arithmetic ability, motivation or concentration, method).

Pandey (2014), did a research on “Factors Effecting Mathematics Achievement of Majhi Students at Sunsari District”. His aim is that to find out the effecting factors that determines the achievement of Majhi students in mathematics. He has done case study under observation and interview with five respondents. He has listed five languages, economic condition of family, family sizes, and over load are the factors affecting Majhi students.

Joshi (2011), had made a research report on the title “Learning Difficulties in Mathematics, A Case Study of Open School Students”. His aim was that to identify the difficulties in learning mathematics of arithmetic for open school students. It is a qualitative study. He was taken 4 respondents from Kathmandu district. She has analyzed the data by interview and observation. His finding was lack of curriculum and instructional materials, lack of supportive environment, less interaction and quality of instruction and lack of practice and fast forgetting are the learning difficulties in mathematics.

Theoretical literature

The researcher discussed the theoretical literature for the study that of factor affecting mathematics achievement of Darai students.

Discontinuity, difference between the culture of home and school, there were more difficulty in learning mathematics and participation of Darai students, simply because of conflicting nature of curriculum, educational setting, social- cultural background, teaching practices of the children. Cultural difference can be regarded as

one of the most influential factor for children's learning. The children with different cultural background in the classroom may expose different learning culture in according with home culture. As a consequence, children from Darai student learn poorly in class and ultimately they have no option except dropping from school. Darai students were from poor economic environment, illiterate family backgrounds they faced many difficulties in learning mathematics. There were learning many theories which can be used for the analysis and interpretation of data such on classical conditioning, operant conditioning, trial and error, social learning theories, and cultural difference theory etc. so for the analysis and interpretation of data the researcher had used cultural difference theory of John Ogbu (2000/2001) and constructivist theory of Vygotsky.

Constructivist theory

Learners are seen as active agents in their learning who construct new knowledge thus empowering the students to discover new meanings and the substantive interrelationships between events rather than the meaning being imposed by others (Bender, 2004). The student is seen as a naturally active learner who constructs new personalized knowledge through linking prior knowledge with new knowledge. Authentic knowledge provides the content for the instructional process, which involves an interactive and collaborative dialogue between the teacher and the student. The teachers approach the instruction within the students “zone of proximal development” ZPD (Vygotsky, 1978) by providing assistance when required (Mercer & Pullen, 2005). Therefore there is an emphasis on real problems based in the student’s interest, motivation and self-initiated solutions. Students concentrate not only on learning new material, but also on how learning takes place (Bender, 2004). However an understanding of how learning takes place does not involve learning

strategies approaches which are viewed as too mechanical. Constructivists do not consider themselves proponents of Meta-cognitive training as previously described (Bender, 2004). Thus constructivists try to “portray the students as a thinker, a creator and a constructor” (Book & Books, 1993). Accordingly, many educators who adhere to constructivist theory recommend the following:

-) Complex, challenging learning environments and authentic tasks
-) Social negotiation and shared responsibility as part of learning
-) Multiple representations of content
-) Understanding that knowledge is constructed
-) Students-centered instruction.

Learning means relatively permanent change in behavior, which occurs as a reinforced practice. It considers both physical and mental process. Behaviorist mentioned that learning is the interaction between human being and external environment. They take learning as stimulus response process. If response to the stimulus is reinforced or rewarded then a kind of habit is informed. The cognitive mentions that learning is an innate capacity of human being.

Another kind of thought about learning derived that it occurs from social interaction. These scholars believe that each and every child learns from society through social interaction with family and environment knowledge can be constructed through the active participation; this new thought is given by constructivism following the theories, actions, reflection and socialization.

Cultural Difference and Discontinuity Theory

The theoretical discussion is needed for the interaction to the finding of the study. There are many theories about learning and development of children. Here, cultural difference and cultural discontinuity theory is main supportive for learning

mathematics to find the factors affecting mathematics achievement. So, here the researcher tried to discuss the theoretical understand of this theory.

In cultural difference and cultural discontinuity theory, Ogbu (2000) deals with the problems in children's learning caused by the difference and discontinuity between the culture of home and culture of school. He says that, those students whose home and school environment doesn't matched they face more obstacles in learning and they do not enough attention in their cultures and they have to hard work to achieving outcomes comparison to the children with culture or environment matched children.

He argues that, learning as not only the product of the culture and language difference but it is the relation between the culture and mainstream culture does not favor learning or schooling. The dominant group controls the school system in their curriculum and using their language. So, the children who are socially and culturally disadvantaged faced many difficulties in learning.

The research report attempts to describe the relation of Darai as a marginalized minority cultures and dominant mainstream culture in the learning of mathematics.

Ogbu's analysis distinguished between levels of cultural difference between majority and minority populations. In some places, he spoke of universal, primary and secondary cultural discontinuities between students backgrounds on one hand, and the behavioral and performance expectations of schools on the other. In other places, he speaks of primary and secondary cultural differences between minority student's cultural backgrounds and school cultures. In Ogbu's conceptualization, universal discontinuities are differences between home and school culture that occur for all students.

Ogbu, (2001) argues that discontinuity is also occurred in the area of language, thought and measurement. It happens mainly due to the difference between the teaching and learning strategies in the home, community and the style used in the school. Ogbu, (1982) argues that the primary secondary culture discontinuity also causes the difficulties in learning and he argues that the children from disadvantage caste tend to develop coping behavior and attitude that are different to school culture that affects their learning.

Ogbu, (2001) argues that the dominant group gets school system in accordance to their own convenience and benefits. E.g. their norms, value and aspirations in the curriculum and teaching learning approaches that suit to them. But dominated groups gets on unfamiliar and unrealistic curriculum and their cultural resources do not match with overall system. So, it is difficulty in learning and cause of failure, dropout. There are always dilemmas that the dominant group does not know or does not want to know about the cultures of subordinate group by saying difficult to know because of the multicultural existence of children in school/society. It is just an escaping trend and nature of the dominant group, the higher caste people from including the subordinate group or disadvantage group into the mainstream. Similarly, although the subordinate groups know the culture of dominant group, they do not need to practice other's culture because their tradition does not let them to act like members of the dominant.

Ogbu (2000) delineate about the cultural difference and cultural discontinuity theory. That deal with the problems in children's learning caused by the differences 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 learning achievement. Similarly, the children with

unmatched or dissimilar home cultures with school cultures and they do not have enough attention in their learning and do not get much recognition of their cultures and they have to work hard to achieve learning outcomes compared to the children with good matched. Ogbu furthermore argues that discontinuity is also occurred in the area of language, thought and measurement it happens mainly due to the difference in the home/community which is informal education and the style used in school is formal education.

Culture is the distinctive patterns of ideas beliefs and norms that characterize the way of life and relation of society or group within a society. Finally, difference in teaching style and learning strategies may be important relations that affect their learning. Sometimes it defined as "customs or tradition and considered to be natural and unchangeable."

Conceptual Framework

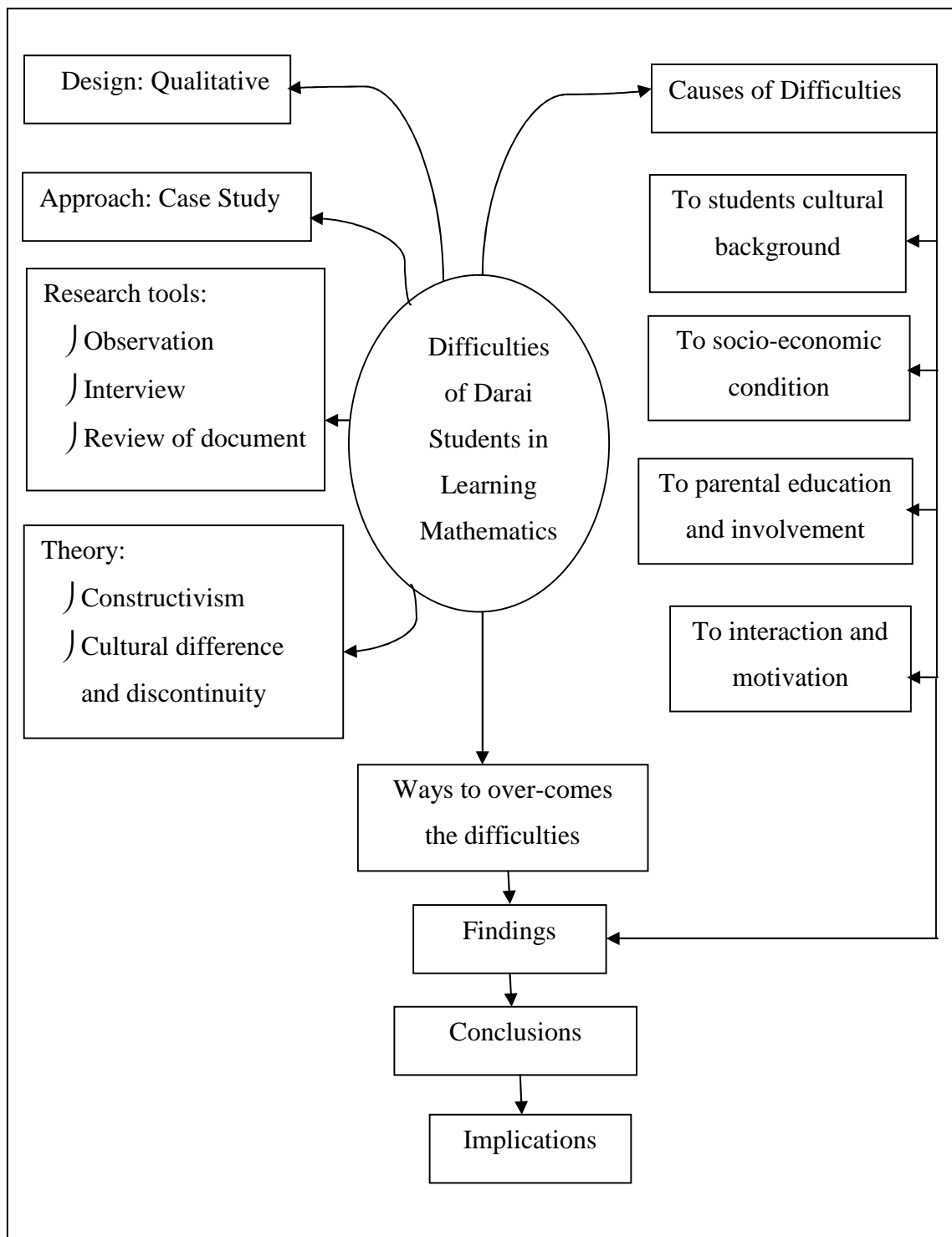
The conceptual framework is the researcher understands of how particular variables in his study connect with each other. Thus, it identifies the variables require in research investigation. It is the researcher's map in pursuing the investigation. It gives us answer of what is done in the thesis really? It is an analytical tool with several variations and contexts. It used to make conceptual distinctions and organize ideas. So, under the title of my thesis I have made here picture of my thesis.

As I know that, very few researchers have been carried out on the difficulties of Darai students in learning mathematics in the qualitative paradigm. The below fig. 1 I had try to show my thesis. This figure shown that it is a qualitative design in case study approach. To collect the correct information purposive sampling has taken. Observation, in-depth interview and review of the documents were taken for the research tools. Constructivism, cultural difference and discontinuity theories were

interlink to justify the used data in the thesis. It has shown the causes of difficulties on right side of the figure and below them from the analysis and interpretation of data, ways to over-comes the difficulties of Darai students in learning mathematics. Then findings, conclusions and implications have shown respectively.

The conceptual framework of this study is shown in the following figure:

Fig 1: Conceptual frame work



Chapter-III

METHODS AND PROCEDURES

Research methodology is a science which determines how the research becomes complete and systematic. So, the methodology is the branch of the research. It is a qualitative research the researcher studies things in their natural setting attempting to make sense of or interpret phenomenon in terms of the meaning of people being to them. This research involved the study and collection of validity of empirical materials, case study, personal experience, life history, interviews, observations, historical interaction, visual texts that describes routine and problematic moment and learning in individuals lives (Anderson, 2001 as cited in Pandey 2014).

Methodology refers to the method or procedures adopted to find out the target, goal or area. This chapter comprises research design, site selection and sampling procedure, tools construction, validation of tools, data collection procedure and data analysis procedure. I have followed the following methodologies.

Research Design

Children's perspectives are gained from watching and listening to children themselves. Since this is a case study so, the researcher used qualitative research study based on in- depth interviews with children, classroom observations, observation of home environment and necessary to gain the teacher's and parent's perspective. Thus, this is the case study research design in nature. For this reason I used the qualitative research.

Case study

Case study research involves the study of issue explore through one or more causes within a bounded system. Creswell (2007) presents case study as a strategy of inquiry or methodology or a comprehensive research strategy. It is a comprehensive

understanding means a complex picture as possible of what is going on an instance and why? In case study, focuses on developing and depth description and analysis of a case or multiple cases. Studying an event, a program an activity, more than individual ia the unit of analysis in case study. In the case study data are analyzed through description of the case and themes of the case as well as cross-case themes(Acharya, 2017).

A case study is a report about a person, group, or situation that has not been. So I like to study of these marginalized ethnic groups. From this research, everyone can know about the Darai caste and his or her religious, occupations, living places and educational position. Also case study can helped to know the participants for the thesis. It studied individually the causes of difficulties of Darai students in learning mathematics. From the collected data, we analyzed and interpreted these data to meet our goals. It has study about the Darai student's difficulties in learning mathematics and tried to address these causes of difficulties by over-comes, which are collected by data of the participations in this research.

From this research, we identified the causes of Darai students, which are made barriers to achieve mathematics learning. From the interview of individual, I made themes of the causes of difficulties and over-comes the difficulties of Darai students in learning mathematics. So, case study allowed an investigator to retain the holistic and meaningful characteristics of real life events of Darai such as individual life cycles, appropriate circumstances and chain of events etc.

Study Site

My study was related to the difficulties of Darai students in learning mathematics and the over-comes the difficulties; the site is also a very important task in order to collect the appropriate information. So I selected 3 Darai community

schools they were Shree Shiva Secondary school situated in Dumsi, Chandi Devi Rastriya Higher Secondary school in Kumaltari and Shree Sarwajyoti school in Siwor, which are situated in Vyas municipality word 5 of Tanahun district.

Identification of participants

Nepal's formal education system comprise of primary, secondary and higher secondary school, which include 10 + 2 years of education and university education. But my focus was secondary grade Darai children who have difficulties in mathematics learning in the class. The main quest of my research is what are the determining factors that cause difficulties in their Mathematics learning? To figure out their major problem I entered their life events and tried my best to unearth their difficulties.

I have selected these all three schools are situated at outside of Damauli city of Tanahun district. These schools are about 2 kilometer far to each other. The school communities are different from each other. On the course of my research, the urgency to study three different Darai people turned out vital in order to make the comparative study of these groups and their active involvement and presence in the school. This provided me some insight to select the students from all three schools containing six members from Darai community. Before deciding the respondents, I discussed with the headmasters of the schools. On the basis of headmasters perceived notion I observed the class of respondents and their everyday life. I then organize the discussion with the respondents, teachers and their parents. I selected two Darai students, one mathematics teacher, parents of these respondents and head teacher from each school. Altogether there were 18 participants in my study.

Selection of the case respondents

Respondents	Genders	Name	Parents Education	Grade	Related School
A	Male	RaskinDarai	Literate	10	Shiva S. School
B	Female	ParuDarai	Illiterate	10	Shiva S. School
C	Female	Mini Darai	Illiterate	10	Chandi Devi H.S.School
D	Male	BibasDarai	Literate	9	Chandi Devi H.S.School
E	Male	DevBdr. Darai	Illiterate	9	Sarwajyoti S. School
F	Female	SumitraDarai	Illiterate	10	Sarwajyoti S. School

Sampling of the Study

This is qualitative research. It explores the difficulties of Darai students in learning mathematics and ways to address the difficulties so I used purposive sampling in my study.

Research Tools

In order to collect the information from the field, different tools are designed. Under case study research process researcher can be use different tools such as interview, participant observation, general observation, document analysis and in depth interview.

With the above understanding, I selected the following tools to gather information. Combined with observation, interviews also allowed me to understand

the meaning that teachers and parents derived of their students and their everyday activities. I met participants separately. The purpose of meeting them separately was to know their day to day life and to ensure the validity of observation. I met them formally and informally in the school as well as at home. I wanted to use tape recorder in interviews, but they were hesitate to talk in the tape recorder and refused to use the tape recorder. Therefore, I switched my technique and noted down the responses. I interviewed parents, mathematics teachers and headmasters, and six Darai students.

The short descriptions of the research tools are as below:

Observation

The data from observation consists of detailed description of people, activities, action, and the full range of inter- personal interactions and human experiences. Observation is fundamental and critical method of inquiry. It is used to discover complex interactions in natural social setting (Yin,1994).

I am also living in Dumsi so I always met with Darai people. Rather than it research informally I observed Darai students, their activities, rules, programs, involvement in the social activities. So, for this research I keenly observed, prepared field notes, which can either serve as data itself or can be used to formulate questions for the interview instruments. Through observation, I have searched the causes of difficulties of Darai students and ways to address the causes of difficulties of Darai students in learning mathematics at secondary level. Additionally, many unclear and unanswered questions became clear from the observation. I was able to read their unseen motive and perception, which could help me to identify the real problems faced by those children in learning mathematics.

Interview Schedule

The data from interviews consists of direct question from people about their experiences, opinions, feelings and knowledge. In my interview, I used guideline to make the interview more focused on the subject of investigation. In the first meeting with the respondents, I appeared informally. However, since they all knew about my purpose or talking with them and the visits, it did not take long to engage us into discussion. After eight days of home visit (each participant children's) I interviewed with their parents. Similarly, after class observation I interviewed with mathematics teacher of those students. Then, I interviewed with headmaster about the Darai students and their Mathematics learning.

Review of the document

The review of the documents is an approach, which researchers use to gain a detail understanding of the setting through analyzing the content of the giving document. Document analysis is an inquiry, which review yield excerpts, quotations or entire passage from records; memorandum, publication and reports (Kahn, 1996 as cited in Ghimire 2013).

Obviously, Review of relevant literatures give better understanding of related topic. Students attendance register, school result sheet, teacher's profile, teacher files of school and other records were reviewed for this study.

Quality Standards

To maintain the standard of my research I used credibility, transferability, dependability and conformability.

Credibility

This concept replaces the idea of internal validity, by which researchers seek to establish confidence in the truth of their findings. To maintain credibility of the

research the researcher tried to spend as much as time for observation and engaging with different people with their work(Acharya, 2017). So, I spend as much as time for observation and engaging with Darai people with their work.

Transferability

Transferability replaces the concept of external validity. This criterion refers to the applicability of findings in one context to other contexts or settings. To maintain transferability the researcher explained practices in the particular community briefly(Acharya, 2017). So, I had explained practice of Darai community in the Darai community.

Dependability

This concept replaces the idea of reliability. It refers to the stability or consistency of the inquiry processes used over time. So, I had presented the logic used for selecting Darai people and events to observe, interview and included in the study.

Conformability

A fourth standard is conformability, which refers to the quality of the results produced by an inquiry in terms of how well they are supported by informants (members) who are involved in the study and by events that are independent of the inquirer. This is sometimes referred to as audit trail (a record of how decisions were made throughout the study). I am also a part of Darai community so, to maintain conformability, before concluding information I reviewed these information myself several times and sometimes I conform those information to my relatives before concluding information as well.

Data Collection Procedure

Going through the above process the information were gathered from teacher's opinion about difficulties in learning mathematics. From the interview, I took the

parent's views about their child expectation and observation, their daily activities in their home and school. In my study I included in-depth interview with those problematic children and their parents and teacher. From this I identified the real problems of Darai student while learning mathematics. All the information that was collected through in-depth interview was recorded in the field note.

First I went to the place where the school is situated and talked to the head master about my purpose. Then I observed the school's register and achievement report. Then I selected two Darai students from secondary level of each school. Then I observed the class, which was being conducted by mathematics teacher on this way I continued for 2 weeks. Similarly, I observed the home environment of those children's to ensure how they are deprived of getting favorable atmosphere at their home. I went to each of their home continuously for four days. In their home I interviewed with their parents with them as well.

Data analysis procedure

The record of the interview of the students and parents was transcribed properly. The records of the observation were also transcribed. Then I had 3 set of data of observation, interview and document review. The collected information at first was categorized in different heading and sub-heading. Identify the real problems in the learning mathematics of Darai students through the interview with respondents and were categorized in different area. Influencing factors and school and home environment were identified through the teachers and parents viewpoint by the interview and discuss with the documents, which are relevant in the context of Darai community. The data thus analyzed was interpreted by using the conceptual framework the researcher develop and matched with the theories, which are, describes in the literature review section.

Chapter- IV

ANALYSIS AND INTERPRETATION OF DATA

In order to look at the difficulties in mathematics' learning I observed of the classroom as well as home conditions, discussed with their parents, met with teachers and Darai children themselves in group and separately. Further, I looked few documents and literatures about Darai culture which were published and unpublished. I selected five cases for my investigation.

The main focus of this study was to find Darai children's home and school environment and their learning difficulties in mathematics. And the main source of the information of this study was of secondary level classes. The data, which came through observation and in-depth interview, were explained in the different headings.

In this section, the data obtained of the study are presented in terms of following topic/ heading: introduction of key respondents, difficulties related to Darai children's cultural background, difficulties related to Socio- economic condition, parental education and their involvement in children's mathematics practice or learning at home and in school, interaction and discussion with teachers and friends and impact of motivation in learning mathematics.

To achieve the objectives or to answer the research questions, I organized this chapter into two sections. Section-I, it deals the causes of difficulties of Darai students in learning mathematics and section-II explores the way to over comes the difficulties of Darai students in learning mathematics.

Section-I: Difficulties Caused by Students' Cultural Background

Darai students are developed from their own home culture but, at school they feel different environment then home environment. So, I came to list the difficulties of Darai students caused by student's cultural background in the following themes:

Difference between home environment and school environment

Home environment plays vital role in the child learning as well as school environment. If there has different home environment and school environment then students can't learn easily. So, through the in-depth interview, the perception of the difficulties of Darai students in learning mathematics is in the following lines:

“Nowadays my parents told to do work in field and at my home most of time, many others people came to drink Mod(wine) and there is no suitable environment to read and to do practice. All my parents as well as other senior drink wine in the early day they do not know anything about my education. I cannot get well environment at home which has at school”(Respondent- A).

“They do not care about son and his education at home. He wants to play game than reading and learning”(Head master of respondent- E).

“She is active and disciplined girl she communicates with us and her friends and she raises question to me about the difficulties while solving problems. But she does not solve these problems at home and, she forgets” (Mathematics teacher of respondent- F).

Homely environment plays the decisive role in functioning and shaping the minds of the students which motivates the individual and leads to do betterment in their education. I also live near-by Darai community and their documents speak that Darai measurement system includes length, time, volume and money, although again, in less practice forms than the school measurement system. Another, distinguishing feature is that ‘most measurements are approximate, unless there is a real need for exactness’. For example, they use Haat, Bitta, Kuret etc. to measure the short length and they use *muthi, manna, pathi* etc. to measure the volume. Darai measures are made quantitatively primarily in economic activities; that is, length, money, and volume are quantified because there is an economic need to do. Darai student's counting system differs from the school counting system. They count as *ekataa*,

doktaa, tektaa for one, two, three. The indigenous geometric knowledge is also a source of discontinuity, first the Darai have very few terms naming abstract geometric shapes. Secondly, their geometric terms are used imprecisely (Mishra, 2015). For example, a hemisphere can be used to denote ‘the upper shape of hat.

Ogbu argue that the problem in children’s learning caused by the differences 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 learning achievement. Similarly, the children with unmatched or dissimilar home cultures with school cultures and they do not have enough attention in their learning and do not get much recognition of their cultures and they have to work hard achieving learning outcomes compared to the children with good matched.

Undoubtedly, home environment and school environment are differing to each other which caused the difficulty of Darai students in learning mathematics.

Affected by traditional values and socio- cultural domination

Darai students are affected by the traditional values and they are dominated by their society. Having in-depth interview of parents, teacher and key respondents most of the Darai parents have keep traditional values so, the parents perception has in this way;

“It is our historical culture to invite other people at home to drink; we are also developed from the same culture. So, we don’t care our children in their learning. If we don’t invite other people then, we can’t manage home expenditure because it’s our business. All his senior sisters are also read in the same environment, so to him also may be”(Parents of respondent- A).

“Daughter reads if there is no works at home and most of night time she managed to does homework. Her younger sister and brother also

want help from her so, she has to pay more attention to these two that deters her to study”(Parents of respondent- B).

“If she passed SLC then we will be marriage her”(Parents of respondent C).

From the above lines of parent’s views I claimed that Darai children follow their ancestral footsteps, Darai children are highly manipulate by their parental culture in which they are tied with their cultural boundaries. Early child marriage, traditional culture, is basically followed by Darai. Darai girls are much more influenced by their parental convention due to which, they are obliged to get married in their early age.

Darai family have traditional skills to make fishing gears, Doko, Namlo, Chattri, Hand using Fan, special mats and hats. They leave freely their child to drink home-made alcohol. It indicates their Childs developed from free environment, lack of guidance, parenting. This is also the viable reason for dropouts of Darai children. The observation in the class room clearly shown that respondents has sheer lack of active participation in the class due to their subjects teacher from other caste which ultimately deters them to share their difficulties with them on the same token classmates from other groups urges them to remain aloof.

Language

Language is not everything in education, but without language, everything is nothing in education (Kandel, 2010). It helped to clear the important of language in teaching and learning. Darai children have their own language. So, in this line my participants were shared following view;

“If there is Darai mathematics teacher that better for us Darai students because, He/ she will speak Darai language with us”(Respondent- C).

“My home condition is so bad so I can’t progress thinking as teacher. There is no time at home to do practice. I have to go filed work when school closed. Mathematics is a practicable and technical subject but,I

have not enough time to do practice. School environment and home environment are totally different. I speak in Darai language at home anytime but, at school I have to interact with nepali language”(Respondent-F).

In this view, Darai have their own native mother-tongue which they communicate on their own community for household purposes and sometimes uses it with their class mate from the same Darai community. Especially Darai respondent have poor Nepali language. By and large they are deprived to use their own native language at their school, which ultimately leads them to use mixed up hybrid language. They speak their own mother tongue at home. Due to their poor Nepali language they felt difficulty to learn mathematics at school.

Ogbu argued that the discontinuity occurs in the area of language. Interaction is the social activity. It brings the maturation in learning. The interaction may be with person, teachers, friends or groups. He argues that language is the major factors for the interaction.

Difficulties Caused by Socio-economic Condition

Economic status plays vital role in our life. Therefore, most of the Darai’s parents have low economic condition means they can’t manage materials for their children properly. To fulfill their basic need they involved their child in labour.

Low socio-economic condition and Child labour

Having low economic condition Darai parents can’t provide necessary materials to their children. So, in this line participant’s opinion as follow:

“We can easily distinguish such type of difficulties of Darai students but we could not provide them tuition and extra class”(Mathematics teacher of respondent-A).

“Darai students do not bring practice books and other necessary materials in mathematics class. So, they have low achieved”(Mathematics teacher of respondent- E).

“I have to do lots of work in my home. Even after returning from the school I have to do some household works. I have no money to buy books and other practice text. I want a separate group to discuss mathematics problems in my class”(Respondent- D).

The perceptual views of the above line made me to say low economic condition is a cause of difficult of Darai students in learning mathematics.

Undoubtedly, I claimed that from my classroom observation at school most of the non Darai students are from the high economic status but, Darai student found difficulties in adjusting and sharing a co-operation with teacher and students at school. Because of poverty, they have to do hard at home. Respondents did not give the sufficient time for the mathematics learning at home but mathematics need more practice than other subject.

The theory of cultural differences and discontinuity emphasizes that, those children, whose home culture and socio-economic condition are much more similar to the cultural of educational system that may result better learning achievement. Similarly, children with matched or dissimilar home culture and socio-economy with school they don't have enough attention in their learning and do not get much recognition of their culture and they have to do hard achieving learning outcomes compares to the children with good matched. It was found that the culture of Darai at home and school were unmatched. So the Darai students had difficulties in learning mathematics at classroom.

They are laborites; their parents had difficulty in materials which is also the cause of incompleteness of homework. They didn't get sufficient time at home. They had to work household work and other. On average, children from disadvantaged low-income families perform substantially worse in mathematics than their counterparts from higher income families. Poor children are 1.5 times more likely to have a

learning disability and two times more likely to repeat a grade and eventually drop out of high school than are their non-poor counter parts (Jeanne and Brooks-Gunn, 2002)

Lack of physical facilities and materials

Without reading materials mathematics learning can't be fulfill. In this regarding I have listed participant's views in the following lines;

"It is more practice subject but there is no more practice due to my household works, no other practice books, no one is there in my family elder than me. Teacher also does not pay attention to the girl students" (Respondent- B).

"He is irregular students so; he can't follow the process of solving problems". And there are no sufficient materials with him. He sits in the last bench. He does not ask any problems with me even with their friends" (Mathematics teacher of respondent- E).

From the above line I came to know that Darai students were not physical facilities and materials in mathematics learning.

While observing the Darai children homely environment I saw they lack basic essential materials such as adequate reading space and other necessary equipments for their extracurricular activities. From it I found that due to the lack of physical facilities they could not perform well and could not get good result and they feel mathematics as a difficult subject.

I found through observation of their house and school that respondents weren't brought mathematics books, copy, and other necessary materials regularly and they didn't bring textbook, copy and other materials as required. It was seen that the main problem of respondents in mathematics classroom is incompleteness of homework and class work. Minority children are disproportionately represented in low-income populations with low physical facilities, resulting in significant racial and

social-class disparities in mathematics learning linked to diminished learning opportunities.

Difficulties Caused by Parental Education and Involvement

Parents are the first teacher of the children. Most of the time children spend time with their parents. So, in the learning process of children parents have to play vital role which bring better performance of their children in education.

Uneducated family

Students want help from parents while getting problems in their study. So, in the above context while I interviewed with respondents and head master their views in the following lines;

“There is vast difference between educated and uneducated family’s children in Darai society. Educated parents help their children in their learning activities but, uneducated family does not care about their children learning activities”(Head master of respondent-A).

“They do not care about son and his education due to their un-education so, Darai students want to play game then reading and learning”(Mathematics teacher of respondent- B).

From the above guideline I claimed that uneducated family is a cause of difficult of Darai students in learning mathematics.

Children are raised in two main environments: home and school. At home children are always and constantly under the critical eyes of the parents. Some of the educated parents help their children with school work regularly or many times. Family education plays a vital role in children’s learning. According to the family education and status, children determine their personality and habits. Family status influence major and long lasting impact on child. They learn modeling character from their parents. Most of the individuals inherit from their family background.

Majority of the Darai people are illiterate and lacks basic information regarding educations, which shows that children can't get adequate guidelines from their parents. But in a general practice parents acts as the role model to lead their children and some basic habits are inherited by their offspring. Thus, respondents lack the orientation and proper understanding of subject matters due to influence of their illiterate parents.

Mathematics requires better practice at home and school on the same part some parental guidelines will be fruitful for them to get rid of mathematical problems. In reality, Darai people can't give adequate guidelines to their children in solving problems due to lack of mathematical information. respondents reveal that while solving mathematical problems at home they are never guided by their parents and have to confine with his own knowledge and horizon.

The majority of the literature on parents'education pertains on the direct, positive influence on achievement the literate also suggests that it influence the beliefs and behaviours of the parents, leading to positive outcomes for children and youth. The opportunity of education is available more too high class and high occupation people. The higher the social classes higher the level of achievement in mathematics. There is a variety of causes for the relative education attainment of the low caste and low economic condition people.

Lack of parental involvement in the school

Parental involvement is a most important factor in the learning mathematics. It focuses the interest of parents in their children. So, from the interview about the view of parental involvement in school is given in the following lines;

“His parents do not visit his school and talk with the teacher due to lack of time. They never come here to interaction about the children”(Head teacher of respondent- D).

“We are busy always household work so; we never visit our daughter school to get her information from the school”(Parents of respondent-B).

“The parents of the students do not come in school and also do not try to understand their children’s behavior, learning ability and their difficulties. Most of the parents leave the whole responsibility for their children to the school. If they are not cared for their children at home that children can’t progress in their learning they are not responsible in learning for their children at home”(Head teacher of respondent-E).

Depending on these views, I notice that lack of parent’s involvement is a cause of difficulties of Darai students in learning mathematics.

The parental involvement in the life of school turned out to be a positive influence upon pupil's progress and development this, included help in classrooms and educational visits, and attendance at meeting to discuss children's progress (Pollard & Bourne, 1994).

Parental involvement in pupil's educational development within the home is also clearly beneficial. Parents who read to their children, heard them read, and provided them with access to books at home had a positive effect upon their children's learning. Parent Teacher meeting conducted in school lacks the presence of Darai student parents clearly signifies that teacher seems less responsible towards Darai students. The essence of maintaining reciprocal relationship among teachers and parents normally leads towards betterment in teaching learning procedure but communication gap make teacher less accountable towards their responsibility.

Lacks of belief, support and lack of motivation

To get success in every work belief is an essential factor. Support and motivation help to continue the work. So, to do well in mathematics subject belief,

support and motivation play vital role. Therefore, in this line the perceptual view of the participants are given below:

We haven't noticed any individual from our caste doing good after completion of high school education so we prefer our children to do some household works such as farming(Parents of respondent-A).

“No-body get job after completion of SLC or higher school education so while completion a level if we chance to get a job then we will continue our education after school level”(Respondent- D).

After analyzing the above views I know that Darai parents do not believe that an educated Darai person can't get a good job. Also it indicated lack of support for their child.

Parental belief has a significant impact on student's mathematics achievement and attitudes towards mathematics (Fun and Chen 2001; Aunola et al. 2003). Parental aspiration and parent's attitudes towards mathematics have been identified as having a significant impact on student's participation in advanced level mathematics and student's achievement in mathematics.

Student thinks school's learning cannot support their daily life. They have to earn money as soon as fast and recent. High school passed candidates from Darai community is also not involved in any good occupation so it urges the Darai parents to engage their children to their own parental occupation like farming labouring. thus, such dogmatic thought leads the children to develop inferior complex and which prone them in lacking confidence and solving technical subject like mathematics.

Government and non-government agencies didn't provided scholarship to the respondents. They didn't get financial support or other educational support from any agencies. While observing I found out those schools don't have the provision to support respondents providing scholarships and boots up their morality. Parent feel extra burden to provide school dress and educational materials to their children and

school has also overlooked such problems which has somehow deteriorated their firm mentality whether to continue their education or not. Resultantly, the respondents feel inferior among their peer groups and can't progress in their education due to lack of concentration in subject matter. Thus how it is the next determining cause of low achievement in mathematics.

Difficulties Caused by Interaction and Motivation

To learn mathematics interaction is good way. To discuss the difficulties of mathematics, interaction can found another way which is easier to the students.

Lack of teacher-students meaningful interaction

Interaction is social activity. Interaction may be within persons or groups. Within person, interaction refers to the mental activity with his/her mind and soul.

“His position is going decreasingly and he doesn't care his study he was not as like it before than this class. He does not involve classroom activity even he does not solve homework and his parents never visit the school, they do not involve teachers-students interactions” (Mathematics teacher of respondent- A).

“She is silent and disciplined girl she does less interact with us and with her friends and she does not raise any question to me about the difficulties while solving mathematics problems” (Mathematics teacher of respondent- C).

“Darai students are silent in nature they don't want interact with teacher about the difficulties of mathematics while solving mathematical problems”(Mathematics teacher of respondent- F).

From the above mathematics teacher of key respondents I claimed that lack of teacher student's interaction is a cause of difficulties of Darai students in learning mathematics.

Vygotsky reported that child is a more effective learner in a social context.

He added that learning awakens a verity of internal development process that is able to operate only when the child interact with his/her conditions that are parent, peers' co-operation and interaction.

In my observation of mathematics classroom of respondents I found that they have poor interaction with the teachers, they do not raised questions to the teacher about their text and their problems. They do not look happy and confident. They do not take helps from their friends to solve their mathematics problems in the school time.

In a common parlance teacher paid more attention to the bright students and discard paying attention to the weaker students and they are marginalized in the class as well.

In constructivism teacher should changes his/her from talking and describing to listening and asking question to the students. Students should change their role from listening and questioning to telling and describing (Upadyaya, 2001).

Those teachers who spend higher proportions of their time not interacting with the children were less successful in promoting progress and development (Pollard & Bourne, 1994).

Discrimination

Good teachers focus to all students equally. No one discriminate to the caste and gander. Thus, in the above line, the perceptional view is given in the below lines;

“Sometimes, when we come to school other students say you Daraini so, we fell dominate at school”(Respondent- B).

“Other caste people do not want our involvement in the social activities. So at school other caste children discriminate in such way; to seat, to take tiffin, other school organized program”(Parents of respondent- E).

So it indicated discrimination having a Darai caste. Darai students never raised the question in return teacher also didn't paid attention towards their difficulties. In a common parlance teacher paid more attention to the bright students and discard paying attention to the weaker students and they are marginalized in the class as well.

Darai girls are knowingly or unknowingly facing partiality whether in their home or at school. Basically, at home they are bound to do more household duties and should remain under social circumstances which lead them to be more introverts in the class. As the domain of mathematics requires some extrovert character because being a technical subjects it demands practice discussion and sharing. On my observation, discrimination is not confined only with the girls indeed, majority of the Darai students are marginalized. Similarly, teacher pays less attention, has less eye contact, and hardly forces them to work them out in the blackboard. So these things always create barriers in the path of teaching and learning mathematics. From the perspective of many Darai has low mathematical performance in the class.

Constructivist believes in student's self-interest and self motivation. For this reason, teacher should give responsibilities to students, respect their answers and encourage them to justify their reasons. Teacher should encourage students to keep trying "quitters never win and winner never quit". Thus, teacher should encourage the students that men learn through mistake (Upadhyaya, 2001).

Group discussion and inter-relationship

Collaborative learning method is also a best way in teaching mathematics. It indicates all friends are members of a family. In addition, it helps to solve mathematical problems easily by discussing in a group. This, the participants perception about this view has given in the following lines;

“While getting difficult problems in mathematics, Darai students never discuss with their group and they don’t want to ask the problem to other known friends”(Mathematics teacher of respondent- D).

“Darai students have no involvement in group discussion. Also they speak less with other students” (Head master of respondent- F).

From the above perception, I come to say that lack of group discussion and inter- relationship is a cause of Difficulties of Darai students in learning mathematics.

Student’s activities in classroom indirectly affect to learning process.

Student’s activities in classroom should appropriate for learning. Activities of respondent in classroom were also observed by the researcher. Due to the unnecessary activities of them some problems were caused. Most of them felt mathematics as a difficult subject. Observation tells that respondents are not mentally prepared when teacher starts the lesson. The participation in the group discussion of respondent was seen very limited. They did not want to take classroom discussion cause of hesitation to share problems in classroom. It is also seen that respondent did not get and motive in participation of classroom group discussion, and teacher didn't care about it.

The relationship between the teachers and the expectation of potential performance of the child is based on factors such as social status, race or gender and resulting achievement (Chapman, 1998). Darai children have poor relationship with the entire teachers. They aren't obedient and some kinds of afraid with the mathematics teacher. Darai students are silent in nature in the classroom. when I was in the class, the key respondents were sitting on the last side of the benches and I asked with them why you are not sitting in the first benches then they replied we didn't get chance on these benches because these benches were covered by the other students. Respondents have their own group in the class and relationship between other caste students was not good. They were developed from silent culture at home. The main influencing factor the lack of interpersonal relation is nature of relationship

between silent culture of home and forwarded culture of school. So due to lack of co-ordination and mutual understanding Darai students can't mingle with other students in turn it hampers their learning mathematics.

Constructivist believes that group discussion is the most needed for learning mathematics. For this reason, teacher should give opportunities to think, work and discuss independently or within the group. Teacher should be aware of whether every individual get chance to talk with in the group for successful mathematics learning (Upadhyaya, 2001).

Primary culture differences may creates problems in interpersonal relation as well as difficulties in academic works for several works for several reasons. Among them, most important reason as children with different cultural backgrounds start schooling assuring different cultural world and human relationship in school but they get a vast difference reality in school.

Section- II: Ways to Address the Causes

On the basis of the above causes of difficulties of Darai students in learning mathematics through the observation, in-depth interview with the key respondents, mathematics teachers, head teachers and review of the documents the ways to address the causes of difficulties in learning mathematics of Darai students are follow:

Ensuring Child Friendly Environment

To get better achievement in mathematics learning an environment plays vital role. So, at school and home if we cannot maintain child friendly environment learning cannot make effective and practicable.

Through the interview with the participants their view about the environment is in the following lines:

“Environment is a most important indicator in learning process. So, we have to maintain properly home and school environment to be child friendly where they can read, write, learn, discuss to each other, share their difficulties and ideas to each other. Home environment can support their learning so, Darai parents have to make child friendly environment at home”(Head teachers of respondents A, B and C).

“A good environment can bring more effective knowledge so, we need child friendly environment in home and school. Child friendly environment helps us to create new ideas and to think new knowledge which is more important to do mathematics practice”(Respondent- F)

Reflecting on and analyzing through the above perception I came to know that child friendly environment is a way to address the Difficulties of Darai students in learning mathematics.

In the topic of improving quality of education in Nepal, national review report (2001-2015) Education for all noticed that ensure child friendly environment that is sensitive and supportive to children from different backgrounds.

Providing Awareness Programs

As maintained in the above data, Darai students are highly manipulated by their parental culture in which they are tied with their cultural boundaries. Children follow their ancestral footsteps. Basically they follow early child marriage. So, the perceptions of the participants are as follow:

“We have to stop our bad traditional values like as early child marriage and we need to reform our other own values to protect for long time. So, there must need to organize awareness programs in our Darai society”(Respondent- D).

“Most of Darai students manipulated by their parental culture like as girls have to join their traditional dance Chudka and Ghatu. Homemade alcohol is used for their god so now days also all them have to drink that alcohol whether they want or they don’t want. So,

we need to provide awareness program”(Mathematics teachers of respondents A,C and E)

From the above perception I claimed that awareness programs can change the life of human. So to stop badly traditional values need to conduct and involve in awareness programs. Most of the parents of Darai students are uneducated so educational awareness programs is better to feel them the importance of education in human life.

Constructivist learning environments foster learning activities that develop critical thinking skills, multiple perspectives and modes of presentation, social interaction with peers and teachers, student ownership in learning, and a self-awareness of the knowledge construction (Driscoll as cited Haward, 2008).

Addressing Social Equality and Gender Parity

Education for all emphasis that there is no any boundary to read and write everybody has that his/her own right. So, being Darai students or Darai girls nobody can-not discrimination. They can read and write easily as others caste people.

The perception views are given in the following lines:

“We need love from ourselves and other caste people to Darai community. We want respect as equal to other caste people at school and in our society”(Respondents of E and F).

Most of the parents also shared me the same line that I got from their children.

When analyzing through the above views I understood that, a way to address the difficulties of Darai students in learning mathematics is addressing social equality and gender parity. It is a method to make social justice in the society. As well as school members, teachers and students have to follow it to maintain social equality and gender parity.

Constitution of Nepal ,right relating to education has included that every citizen shall have the right to get compulsory and free education up to the basic level

and free education up to the secondary level from the State. Also right against untouchability and discrimination, in our Constitution it has included that no person shall be subjected to any form of untouchability or discrimination in any private and public places on grounds of his or her origin, caste, tribe, community, profession, occupation or physical condition.

Providing Scholarship

A little thing of one person makes big thing for another person. So, a little sum of money, textbooks materials, and cloths can be innovative activities to poor Darai children. Most of the Darai parents want their children works together with their parents to manage their house wages. So, schools should provide scholarship to these Darai students.

The views of the participants on this line are below:

“School has to recognize these students who are unable to maintain their learning materials. Knowing the poor Darai students other agency also can provide the scholarship like as save the children, INGO, which is a huge amount and support of our life. Also we want finical support from the teacher in our study. They can help us in extra classes” (Respondents A and B).

“We are unable to manage our house wages also so, our children can’t manage their reading materials so, some scholarship program is better for us which, help our children to buy their textbooks, copies and other practice books”(Parents of respondents E and F).

From the perception of the participation I claimed that when the Darai students can get the scholarship from school and other agencies they must be manage their reading textbook and other practice materials. Education for all(2015) pointed that scholarship programmes with particular focus on girls and disadvantaged children such as, Dalits, disadvantaged Janajatis, poor children, children with disabilities, etc.; supported the expansion of school access, participation and retention

in both primary and secondary education in the innovative activities that contributed to achievements of the students.

Linking Teaching Pedagogy with Students Daily Life

When I observed the mathematics classes, mathematics teachers were not linking their homemade materials in the teaching. Teachers do not want interlink their home made materials and mathematics. For example from a home- made hat as mathematics teacher can teach concept of centre of circle, concentric circles, hemisphere etc. So, undoubtedly we can say that mathematics creates culture and culture creates mathematics.

The views of the participants on this are given follow:

“Mathematics teacher have to use homemade materials and local materials which help the students to know mathematics and they can solve mathematics by interlinking with their daily life. But most of the teachers are practiced the students to get better marks unless understanding” (Head teacher of respondent- C)

“We need to understand how to make Doko, Nanglo, Chhatri (hat), Halo, Namlo in our education system so, if we can linked our teaching pedagogy with these our homemade materials then mathematics helps our lifelong learning”(Respondent- E).

Supporting this view, I came to know that linking teaching pedagogy with student’s daily life is a way to address the difficulties of Darai students in learning mathematics. Through the class observation, I suggested that being as mathematics teacher we need to practice in our teaching interlink with students daily life.

Parental Involvement

Hearing and caring is most important thing in learning process. Learning process depends interlink with students, teachers and parents to each other. Parental involvement plays vital role in their children education.

The perceptual views of the participants are:

“Our parents do not want to visit our school. They do not ask any question about our study. If our parents take interest of our reading and writing it is better for us, which help us in our Mathematics learning”(Respondents A and B).

“It is better for us, when their parents take responsibility of their children education. We need their proper involvement in their children education. Parents have important role to change their children. They are also teachers for their children”(Head teacher of respondent A).

Reflecting and analyzing through the above perceptual views I came to know that parental involvement is a most important to bring new change and establish the learning knowledge of their children. Supporting this view Kandel (2015) agree that parents also should be careful about their children’s learning ability and parents frequently should take information from school and if there are any problems to their children regarding their learning, they should guided at home and motivate them. Khanal (2015) concluded that it is necessary to have parents’ participant and help the students to use some strategies to address poor performance in mathematics.

Providing Guidance and Motivation

Guidance helps to solve the difficulties of mathematics and motivation helps to achieve success in mathematics learning. Motivation will remove the mathematical anxiety which plays a vital role in the learning mathematics; it increases the willing power of learners.

About this line my participants said that:

“We need help from our senior educator person at home like as from elder sister, brother and parents to solve mathematical problems. And teachers also have to help us individually and motivate us to solve mathematical problems in classroom. In the confusion of mathematics problems we need help and guideline from our teacher and friends at home from the senior”(Respondents).

“Guidance and motivation are the way forward for the difficulties of Darai students in learning mathematics. So they need guidance from teachers as well as from their parents. To increase the achievement in mathematics learning we have to motivate them by organizing motivation programs”(Head teacher of respondent-E).

From the above views I claimed that guidance and motivation is a way to increase the achievement of mathematics. So, to deduce the difficulties of Darai students in learning mathematics proper guidance and motivation is needed.

Motivation of both teachers and students towards learning plays vital role for better achievement. So as to motivate the students in learning the teachers should be familiar and curious in the aim and objectives of the class teaching (Ericson, 1978). Students can be motivated through appropriate feedback. Informative feedback should be provided to the students (NCCREST, N.D) during checking assignments, class works and distributing students’ progress report for betterment of their performance(Acharya, 2017). Khanal (2015) concluded that to enhance the personal confidence, guiding the students to find the effective learning skills and corrected the negative attitude.

Involving Group Discussion and Inter-relationship Programs

From the above views most of the Darai students are introvert and enjoy aloof. So to enhance the achievement of Darai students in learning mathematics we can involve the Darai students in group discussion and inter-relationship programs.

The views for the heading of the participants are as follows:

“Darai children are shy in nature. They can’t express their difficulties of mathematics with teachers and friends. So, to children need to proper involvement in group discussion and enhance the relation with other caste children in the classroom. Then, they will be open to share them difficulties with teachers and friends”(Parents of respondent- C).

“Darai students need to involve in group discussion while teaching mathematics. They will get better understanding from their friends than their teachers because they are afraid to ask with teacher directly. They have to cooperate with other by involving inter-relationship programs”(Mathematics teacher of respondent- B).

By supporting these views I concluded that group discussion is a good method to solve mathematical problems of Darai students. To enhance the relation with other students and teachers inter-relationship is better method to these Darai students which, help them in cooperative learning in mathematics classes.

In this line, Acharya (2017) agrees that students can learn more effectively if teacher makes group and gives group tasks in collaboration focusing for marginalized students.

Chapter- V

FINDINGS, CONCLUSIONS AND IMPLICATIONS

This chapter includes the findings, conclusions and implications of the whole study. Whole research is conducted to find out the causes of difficulties of Darai students in learning mathematics and over-comes from these difficulties.

Findings

As reflected in the above chapter, analysis and interpretation of data which studied the causes of difficulties of Darai students in learning mathematics the finding of the causes of difficulties of Darai students in learning mathematics are given below:

-) There is a different between home environment and school environment, which is a barrier to learn mathematics,
-) Traditional values and socio-cultural domination,
-) Language is a barrier to get information from their teacher in the classroom and from their other friends,
-) Effective by discrimination being Darai caste at school and in the society,
-) Low socio-economic condition and child labour follow to the low achievement in mathematics learning,
-) Lack of physical facilities and materials also follow to the low achievement in mathematics learning,
-) Being uneducated family caused their children can't get good guidance and motivation in the home to do homework and practice of mathematics subject,
-) Lack of parental involvement in the school caused can't progress the Darai students in learning mathematics,

-) Lack of support and motivation,
-) Lack of teacher-students meaningful interaction,
-) Lack of group discussion and inter-relationship while teaching among the students.

Similar as above causes of difficulties of Darai students of learning mathematics I would like to list out the ways to address the difficulties of Darai students in learning mathematics by analyzing the analysis and interpretation of the data. So ways to address the difficulties of Darai students in learning mathematics are given below:

-) Ensuring child friendly environment,
-) Providing awareness programs,
-) Addressing social equality and gender equity,
-) Providing scholarship,
-) Linking teaching pedagogy with students daily life,
-) Parental involvement,
-) Providing guidance and motivation,
-) Involving group discussion and inter-relationship programs.

Conclusion

From the above findings I came up with the conclusion that to maintain the gap between home environment and school environment we should have to ensure child friendly environment. Providing awareness programs, we can take away traditional bad values of the Darai students. It should have to addressing social equality and gender parity for the causes of domination and discrimination of Darai students and parents. Darai students have low socio-economic condition so, it have to provide scholarship to the Darai students by knowing these poor Darai children from

school. Also it helps to manage their learning materials like as textbooks, copies, practice books etc. of Darai students. Proper guidance and motivation can change the achievements of Darai students. Parents are the teachers of their children so, parental involvement plays vital role in the mathematics learning of Darai students.

Responsibility of parents also changes the mathematics achievement of Darai students. Less involvement in group discussion and inter-relationship programs are barriers to learn mathematics so, emphasis the Darai students in group discussion and inter-relationship programs. To address the student's anxiety in mathematics learning we need to link teaching pedagogy with students daily life of the Darai community.

Implications

My research will be a way to improve school level mathematics education from different cultural background. My research will help in the study about the causes faced by Darai students of other levels as well. The teacher preparation about effective pedagogy can be another alternative for improving situation in understanding the language of the children. This inquiry will help to improve our mathematical pedagogy and solve the problems in teaching learning mathematics. The main implication of this study is as follow;

-) All the necessary educational materials should be given from the school to the Darai students,
-) The Darai parents should recognized their children causes of difficulties in learning mathematics,
-) The mathematics teacher should recognized Darai student's behavior, interest and their difficulties in learning mathematics,
-) Government and non-government institution should provided their basic need to maintain their life easily,

-) The curriculum planners, the text book writer and educational planners may get some useful information to improve their field,
-) Teacher should be going to the Darai student's home and study their real situation and, they should be discussed with parents and teacher about their children,
-) Darai students as well as their parents may get the over-comes of the difficulties of Darai students in the learning process,
-) It may be help to change the life style of Darai people who are lived in poor economic condition,
-) It may be help me further study of Darai students.

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Appendix-A

CLASSROOM OBSERVATION FORM

School's Name: _____ Address: _____

Teacher's Name: _____ Class: _____

Total No. of students: _____ Total No. of Darai Students: _____

Date: _____

The researcher has observed the classroom under the following criteria;

Classroom Management:

-) Opportunity to take seat for Darai students,
-) Position in the setting of Darai students,
-) Classroom Environment.

Darai Student's Activities in Classroom

-) Interaction with teacher,
-) Cooperation with other caste students,
-) Completion of class work on time,
-) Their interest to do mathematics problems,
-) Availability of textbooks, copies and other instructional materials.

Teacher's Activities in Classroom

-) Focus on Darai students,
-) Interaction with Darai students,
-) Encourage to Darai students,
-) Use of re-inforcement.

Appendix- B

Interview Guideline with Head Teacher

Name: _____ Date: _____ -

Qualification: _____ Sex: _____

Experience as head teacher: _____ Address: _____

Training: _____

School: _____

The researcher has taken an interview with head teacher to collect the information under the following mentioned questions;

-) Does the Darai parent involve the school programs?
-) Does the Darai parent take care on their children's education?
-) Does the Darai student get scholarship and educational materials from the school and other institutions?
-) Does the school environment, child friendly?
-) Does the school organize relationship program with Darai students properly?
-) Does the school facility Darai students to involve in extra curriculum activities?
-) Can the administration provide Darai teacher?
-) How to reduce the difficulties of Darai students in learning mathematics?
-) Do the Darai parents visit the school properly to interact with subject teachers?
-) What are the ways to address the difficulties of Darai students in learning mathematics?

Appendix- C

Interview Guideline with Students

Name of the Students: _____ Date: _____

Class: _____ Sex: _____

Roll No.: _____ Age: _____

Address: _____ Roll.No.: _____

School: _____

The researcher has asked the Darai students to the given information about the following topic;

-) Does your teacher describe the problems individually?
-) Do you bring all of your textbooks, copies and other related materials regularly?
-) Is there enough time to do homework at home?
-) Do you get help to solve mathematical problems from your parents at home?
-) Do you complete your class work on time?
-) Do you get help to solve mathematical problems from your classmates?
-) Do you feel difficult to understand Nepali language?
-) Do your parents say to engage household and other field work?
-) Are your friends co-operating with you?
-) Do you involve in group discussion and inter-relationship programs in learning mathematics?
-) Do you get equal chance in participation of classroom discussion?
-) How do the difficulties of Darai students in learning mathematics can be reduce?

Appendix- D
Interview Guideline with Mathematics Teacher

Name: _____ Date: _____ -
 Qualification: _____ Sex: _____
 Experience as teacher: _____ Address: _____
 Training: _____
 School: _____

The researcher has taken an interview with mathematics teacher to collect the information under the following mentioned question(specially focusing Darai students);

- J Do the Darai students follow your instruction in the class hour?
- J Do you feel difficult to make them understand in Nepali language?
- J Do they show homework regularly?
- J View of mathematics teacher towards the causes of difficulties of Darai students in learning mathematics?
- J Are their parents co-operates for their children learning regularly?
- J Do they bring all of their textbooks, copies and other related materials regularly?
- J Do you teach them by making unbiased environment?
- J Does your school administration conduct extra classes for the Darai students?
- J Do you feel that behavior towards you is different than others?
- J Do you describe the problems of mathematics individually to the students?
- J What will be the relation between mathematics teacher and Darai students?
- J How can we address the difficulties of Darai students in learning mathematics?

Appendix- E**Interview Guideline with Parents**

Name: _____ Date: _____ -

Occupation: _____ Sex: _____

Address: _____

The researcher has taken an interview with parents to collect the information under the following mentioned questions;

-) Do you involve the school programs?
-) Do you take care on their children's education?
-) Does the children's get scholarship and educational materials from the school and other institutions?
-) Is there home environment, child friendly?
-) Does the school organize relationship program with Darai students/parents properly?
-) Does the school facility Darai students to involve in extra curriculum activities?
-) How to reduce the difficulties of your children in learning mathematics?
-) Do you visit the school properly to interact with subject teachers?

