

CHAPTER I

INTRODUCTION

Background of the study

In Nepal, mathematics is a core and compulsory subject in school level and optional subject in higher level. This subject is perceived as useful since it forms the basis for the modern scientific and technological development. Students' high or low achievement in mathematics would create a hot debate among the teachers, parents, researchers and other stakeholders in education. Participation means involvement of people in many activities for certain purposes. Student involvement creates and models inclusive environment where students find opportunities for personal and professional development. We integrate in class and out of class learning to provide positive experiences through programs, services and events. Participation of girls in Mathematics is low in comparison to boys in higher studies. Mathematics is a technical subject which needs more time to practice and high attention to learn but by nature such qualities are found in very few girls. In context of our country, girls are not encouraged for study by their parents and society. Less number of girls gets chance to involve in Math education comparatively.

There are some causes of less participation of girls in mathematics. Mathematics need much time to practice but almost girls don't get enough time to practice it. They have to look after their household work. Most of the girl don't get opportunities of higher study with subjects relating to math so girls are not interested in math. They only try to pass SLC. Girls continue their study with another easy subject. So, participation of girls in higher study is almost less. This is poor and very bad aspect of our country.

In our Tribhuvan University, Department of mathematics Education there are 18 teachers among them 3 are female teacher. In our batch there were total 85 students and among them 15 were girls. According to the National Population and Housing census 2011 public by the central Bureau of statistics (CBS), the female literacy rate is 57.4% which is low in comparison to the male literacy rate 75.1%. Though the female literacy rate increased from 42.8% (2001 census) to 57.4% still majority of girls are deprived from education.

In rural areas of Nepal, female have no access to education because of conservative social structure. For example, people still think that girls should not be educated and they should be kept only around in household activities. Moreover, some societies still wouldn't see positively if girls go to school. As a result, woman has no accessibility to get any job such as government and private. As a consequence, they should fully depend on their family and husband in terms of financial support. As in my experience, there is always a low participation of female in mathematics classes. I think girls may view mathematics as a male domain that is difficult to reconcile with their sex- role identity. Girls may have internalized cultural ideals about who belongs in mathematics. Educators also noted that girls have low self confidence regarding their performance with mathematics.

An international researcher also finds out that even in the most industrialized countries women are less paid than men (Leach 2003). There is an obvious negative feedback loop between social and cultural pressures and girl's self-perception that cannot do well in mathematics. Most of the teachers perceive that girls may feel embarrassed to show that they excel in mathematics. Many educators believe that

girls may feel discouraged from proceeding in advanced mathematics classes when they are one of only a few female students in a class.

There are several reasons on chosen this topic for the study. The first reason for choosing this topic is being the 16% lady to study M. Ed. in Mathematics in my batch and my personal interest is that the numbers of females are not participating in mathematics classroom learning when I was studying in mathematics on different level. Other reasons, my school level learning journey began from Gorkha. My mathematics teacher, who ask the question and give us mathematical problem most of the time boys were quickly, solved but not girls. Although teacher had given emphasis to girls by saying girls you should first solve the problem but we are (girls) said that “Sir we can’t do because boys are talented in mathematics, we are not.” When I was in grade IX, our mathematics teacher said only very talent pupil can take optional mathematics as an additional paper and rest can take Economics, so boys were taken mathematics and girls were not because weak students can’t succeed in S.L.C. examination. So, I also ready to take economics as an additional paper without my interest. In our country gender inequity is one of the causes of the low participation of females in mathematics learning.

Nepal is developing country where most of the people are uneducated. In the context of Nepalese government school, there is the low participation of girls in mathematics classroom. Especially Girls` has very low participation in every sector. Though, there is more than half percentage population of girls in total population but they have low participation in every sector (Bhattarai, 2015). Least number of girls reaches in M. Ed. Level and result shows girls have fewer competencies in mathematics education. So, I’m interested to dig out the status of girl’s participation in

mathematics education at M. Ed. level. What is the status of girl's participation? What are the problems faced by girls while learning mathematics? Are the central focuses of this study.

Statement of the Problem

Female student's participation in Mathematics at University level is very low in the context of Nepal. They do not select mathematics for the advance mathematics course in faculties like engineering, science and technology. For these faculties, it is necessary to select mathematics course. What are the causes of girl's low participation in mathematics at University level is not yet determined on the basis of the research? Thus, the researcher is interested to find out the situation of girl's participation in mathematics with respect to attendance, participation on class work and assessment, interaction with peers, interaction with teachers and involvement in extra-curricular activities.

This study was mainly concerned with the participation of girls in mathematics learning at University level. It also focuses on the problems faced by girls in mathematics learning.

For this, the study intends to address the following research questions:

-) How the girl's participate in classroom teaching and learning?
-) Why girls don't feel comfortable in Learning Mathematics?

Objectives of the Study

The main objectives of this study were as follows:

-) To explore the participation of girls in mathematics at University level
-) To dig out the problems faced by girls while learning mathematics

Significance of the Study

Here, I choose this issue which had really affected me during the secondary level of education in my life. Experiencing long period of learning and teaching as a mathematics students and teacher in different levels made me feel that girl's participation in mathematics subjects is very low in comparison to boys. Thus, I decided the research issue topic which is "Participation of girls in mathematics at University level". Here, I am going to explore the view of girls studying in university level about the mathematics. Mainly, my research is related to the girl's participation and the problems they faced while learning mathematics at M.Ed. level. The fact is that mathematics is unavoidable for all but learning mathematics is influenced by various factors such as religion, culture, political issues and social aspects. Mathematics is important for all. So, there should be equal participation of male and female in learning mathematics. Female should be provided opportunity for learning mathematics. It is clear that "educated women are required for the well development of whole nation". An empowered mother is the people best suited to recognized and promote the best interact of the child in every sphere survival development promotion and participation (Sharma, 2014).

Research studies shows that it has been practiced to make equal participation of male and female in all levels of education but still there is the situation where girls are less participated in learning mathematics in master's level. I have inquired about the knowledge and their effects in contextual in learning mathematics. So, my study mainly centralizes it was focused to explore the status of girl's participation and the problem faced by girls' students in classroom and out of classroom. Every research is important in itself because it give details of various unseen facts in any area of study. Most of the girls don't select mathematics in school and University level. The need of

mathematics is apparent for everyday life as well as for higher studies in the field of science and technology.

The significance of the study is given as:

-) The study has found the situation of girl`s participation in mathematics at University level, which is valuable thing for teacher, curriculum designer and other stake-holder related to education
-) It provided the appropriate information about the difficulty of girls in learning mathematics
-) This study has also opened the door for the further study about the problem in mathematics learning of girl`s
-) It has help to develop effective mathematical instructional planning for girl`s
-) It helped to encourage and motivate the girls towards mathematics education

Delimitation of the Study

Each study is not rigorous, perfect and free of limitation. Delimitation of the study concerns with the limitations of time, financial resources and material. This study has been focusing on the exploring how the girls perceive the mathematics. It has not study about the participation of girls in teaching other field like administration and management. In my research I have done research on the participation of girls in the mathematics at University Level education only. Thus, this study has some limitation which I pointed below:

-) Study was limited to Tribhuvan University

-) The research study included only M. ED girl students
-) This study was conducted on only mathematics class

Definition of related Terms

Girls: In this study girl is defined as girls of M. Ed. (2074\075) years who are studying in Mathematics Education.

Participation: In this study participation means girls involvement in only six fields that are regularly present in classroom, doing class work, doing homework, involvement in extra-curricular activities, interaction with teachers and interaction with peers.

Girl's Interest: This refers interest of the girls in selecting University Level Mathematics.

Family Background: Family background refers what type of family a student conic from. It relates with consciousness of guardian, education status, economics status, freedom and other facilities.

School Related Factor: The variables such as teacher behavior, prior achievement and peer group influence are taken under school factors. These variables affect the attitude of girl students while selecting mathematics.

Learning: Learning means acquiring something useful by consciously or unconsciously. Learning here refers to acquiring the knowledge of mathematics.

Household work: Works like that; kitchen works, collecting drinking water, firewood and look her younger siblings.

CHAPTER II

LITERATURE REVIEW

A review of related literature is source of further study of research task. It helps us to give the better idea at surveying in research. There are so many research studies about the 'Participation of Girls in Mathematics at University Level' under different variables such as teacher, students, family background, socio-economic factor, mentally and physically health problem etc.

In this section, some related literature with this topic was reviewed as mention below:

Empirical Literature

The empirical study of literature is an interdisciplinary field of research which includes the psychology, Sociology, Philosophy, the contextual study of literature, and the history of reading literary texts. Several types of related literature were received in this study which helps to make the concept clear for study and also directs to analyzed and interpret data. Some related literature was reviewed as follows.

Giri (2016), did a research on thesis topic "Factors affecting girls' participation at higher secondary level mathematics in Doti district" with three objectives: level of girls participation, causes of low participation and analyze the most significance factor of girls in mathematics at University level shows that the participation girls' students in mathematics is very low. Society as a whole believed that female is mathematically less capable than male. This research shows that there are mainly six factors were identified as influential variables for the participation of girls in mathematics. They are: home environment, school environment, teaching learning process, attitude towards mathematics, time variable, and social variable. Among

them the researcher concluded that the social variable is most significance factor of girl participation in mathematics.

Rupakheti (2007), did a research on thesis topic "Girls participation in mathematics at University level" shows that Nepalese society is male dominated society and there is the tradition that mathematics is just form males. There is an image in the society that mathematics is hard and time-consuming subject, which lady cannot study. From the interaction with her participants researcher found that they were also discouraged to study mathematics from their secondary level. Due to lack of supportive environment of the society and the family members, girls lose their confidence to study mathematics in their higher study. If there were a few female role models in the society, other girls could be motivated to study higher mathematics. Thus, there is low participation of girls in higher level mathematic.

CERID (1996), did research on the topic "The Girls Education in Nepal". It showing parents reasons for their daughters not allowing school by gender. Girls students in secondary level are normally drop out, not sent to the school because of social discrimination, poor economic condition and child labor requirements in the family. Normally, girls are used for household requirements such as fetching water, collecting fuel wood, cooking, washing and cleaning, child care, land preparation, planting and harvesting. The most drop outs were for agricultural families. It was observed there was a strange inverse relationship between household income and early school leaving and that need to work was the primary causes of dropping out from school. There was also a strong inverse relationship between family size and early withdrawals from school.

Khanal (2007), carried out a research on 'The effect of gender in learning mathematics' which aimed to describe the affecting factors on girls learning mathematics. The sampling frame consisted of 12 respondents from different family background and data were collected through face to face interview and classroom observation. The finding shows that for getting good achievement in learning mathematics girls do more practice, higher expectation of teacher from the girl students as well as family need positive support.

Pandey (2007), did research entitled "Factors influencing mathematics achievement: a case study of ineffective secondary school of Kailali district." This thesis finds, influencing factors of low mathematics achievement in ineffective secondary schools had girls involved in household work and result is poor in mathematics. They had less time for their mathematics homework. Motivation plays an important role in student's mathematics achievement, prior knowledge and present knowledge achievement are strongly co-related. The more student's study and hard labor at home the more success is seen in mathematics learning.

Janwali (2007), did a research in "Causes that affect mathematics achievement of girl students" to determine the correlation between affecting factors and mathematical achievement. The researcher adopted the survey method in this study. The sample of the study was determined by convenience sampling from Rupandehi district. Researcher selected 25 sample students from different schools of district situated in rural and urban areas. In this study one set of questionnaires was developed and three point like scale for convincing the respondent were developed for the collection of needed information which was used for students. The conclusion of this research work was effective classroom teaching such as planning environment, less use of

instructional materials, appropriateness to teaching participation on discussion, activity have strongly positive effect on mathematics achievement of girl students. It concludes that the effective classroom teaching is very essential for increasing the mathematics achievement of girl's students so it should be improved. The teacher behavior and family background are also having positive effect so that the teacher and parents have equally responsible for the girls' students learning activities in school and create good environment at home for learning and improve the mathematics achievement of girl students.

Bhandari (2012), carried out a research on 'Girls participation in mathematics learning'. The main objective of this study was to explore the girl's participation in major mathematics, their attitude towards subject, achievement and to explore the factors contributing to and hindering in girl's mathematics learning in the higher secondary level. This is qualitative research which includes participants the required data were collected through interview observation logs. After the analysis of collected data, the finding showed that girl participation in learning mathematics is lower due to the old and traditional gender concept, attitude towards mathematics, nature of girls, teacher behavior and parents support and environment in schools and homes. Furthermore, this study showed the need for life relevant curriculum to attract girl's students toward mathematics.

Thapa (2014), conducted a research entitled 'Participation of girls in secondary mathematics classroom' which aimed to explore the perception of school principals and mathematics teacher towards girl's participation in mathematics. Altogether 14 participation including 2 principles, 6 teachers, 6 students from both public and private schools were selected as sample of this study. The required data

were collected through open-ended questions. After the analysis and interpretation of collected data, the finding demonstrated that due to their self interest, feeling competent, hard working and discipline nature supported them to perform well in mathematics and motivate them to participate actively in learning. Similarly, the student showed that there are three major factors parents' education, home environment related to school factors and students` self interest related to present factors causes girl's involvement in learning mathematics, furthermore, it showed that there need qualified and student friendly teacher recruitment for promoting participatory learning for girls in mathematics.

Liping (2014), carried out a research entitled 'socio-cultural factors that influence girl's participation in mathematics in secondary schools in the Oshana education region' which aimed to find out how socio-cultural factors influence girl's participation in mathematics in the Oshana education region. This is the mixed research design that employed both quantitative and qualitative approach together for collecting data. All 216 girls studying at grade 11 and 12 classes from eight secondary schools in the Oshana education region. The required data were collected using open ended and close ended questions. The finding shows that the perceptions of girls were influenced by cultural beliefs, child-rearing practices and gender-role stereotypes in the family. This study showed that the additional barriers to girl's participation and learning in mathematics included lack of support for the parent's teachers and peers as well as the masculine belief that mathematics is difficult. Further, it suggests that girls should be empowered and prepared physically and mentally in order to encourage them to study mathematics.

Rawat (2015), carried out a research entitled 'Participation of girls at higher secondary levels mathematics in Surkhet district' which aimed to explore the factors of low participation of girls in learning mathematics at higher secondary level. This is the qualitative research based on case study. Altogether 8 girls students reading mathematics were selected as participants and questionnaire, interview and observation checklist were used as data collection tools. Both, primary and secondary data were used for the study and finding shows that there was low participation of girls in mathematics at higher secondary level due to the factor : teacher's attitude towards participation of girls, parent attitude ,girls interest, early marriage and social impact , parents economic status was also the cause of girls low participation in learning mathematics.

Fletcher (n .d), carried out a research entitled 'Participation of women in mathematics at the university level' which aimed to find out what factors made the women to study mathematics at university level, careers that women studying mathematics prefer in order to use there in career advice and to find out the perception of female undergraduate mathematics students of low female participation in order to investigate these future. Altogether 397 women studying mathematics from four public universities in Ghana responded to a structured questionnaire. The finding revealed that apart from the women perceived self-confidence and high ability in mathematics. Further influenced the women most to study mathematics at the university level. The women were least influenced by male and female role model in mathematics.

Ramtu (2014), did a research on thesis topic 'An Investigation of Gender Difference in Mathematics Class Participation: A Case Study of Early Primary

Learners in Mombasa Kenya' shows that boys no longer dominate the class in early primary classes might be reached. Despite the fact that both boys and girls are interested and enjoy doing mathematics, girls are noticed to make a great contribution to classroom participation, not only by answering the teacher`s questions but for their energetic efforts to learn mathematics, willingness to lead others in group discussion, hence enhancing good classroom interaction. Young girls seem to enjoy mathematics just as much as boys. In upper primary classes, however, boys are twice as likely as girls to enjoy math and their class participation become higher, hence persisting gender gap in mathematics achievement and performance in final assessments and examinations.

Adeyemi (2015), shows on his research article 'Girls play with Barbies, boys play with Legos: Explanation for gender differences in mathematics' there is low female participation in mathematics. Historically education of females was problematic across the globe, females were considered as most suitable for care-giving professions. His research concluded that the reasons for low female participation in mathematics are economic factors, psychological factor, biological factors, attitude and belief towards mathematics and social factors. Finally, he suggests that teachers, parents and counsellor should be role model for female students; fight against gender stereotypes.

Dweek (2014), shows in his research topic girls in the Ethiopian society are not treated as equal as the boys and they are not given equal opportunity in all aspects. Usually they spent most of the time helping their mothers at home and hence no time for study, early marriage is common practice particularly in the rural areas. This doesn't motivate girls to pursue their education in stable condition. Effort must be

intensified to bring awareness in order to improve the problems of girls in the society as the saying goes” teaching a woman is teaching a society.

On the basis of above related literature I found that girls have low participation in mathematics at learning. I concluded that the poverty, social belief, social tradition, cost of education, household work load, problem of health, early marriage all these factors affected the girls on participation in mathematics teaching and learning at higher level. In this research time is being modernize the position of girls in our society is changing slowly. The literacy rate of female is increasing day to day. Women are leading our country. Government provides more opportunities for girls. This research is focus on what different between previous years and coming years and to find out the improvement in girls` participation in mathematics at University level.

Theoretical Review

Theories provide an important base for understanding and interpreting the realities that come across the process of research. For this purpose of understanding the realities, I discuss below the theories that I adopt in my study.

Feminism Theory and Education

Since my study deals the discrimination against the girls in school, I discuss feminist theory and education particularly. The feminist argue that patriarchal society prepares the girls for the subordinated roles both in public and domestic life, with boys/men leading the upper posts and taking major decisions. In educational area, they have argued that girls are not only disadvantaged in the educational system but also learn to be subordinate and to accept dominant ideologies of feminism and

masculinism. They explain that subtle processes coupled with patriarchy make girls excel only in particular subjects, thus delimiting their opportunities in labor market.

Feminist research has shown that girls learn to create their identity as feminized radicalized and located within a class system through schooling processes. They further claim that schooling depicts patriarchal nature through structural positioning of women in lower secondary level of schooling system. “The axis of feminist enquiry is gender, which consists of deeply ensconced social meaning and their derivative power” (Wood, as cited in Fox & Murry, 2000). Female members of the school, both students and teachers, are disadvantaged irrespective of the attitudes and values of individual teachers or the policies of individual schools or local authorities (Myers, Anderson & Risman, 1998). Thus, feminist sociology consists of theories that provide base for understanding and explaining actions of what is going on. As theories make sense of facts, similarly feminist`s theories provide basis for explaining gender division in all spheres of society including education, about subordination and oppression of the women. Much of the feminist theory focuses on analyzing gender inequality and the promotion of women`s rights, interests and issues. Among various feminist perspectives I have adopted radical and social feminism for my study. These feminist theories address oppression of women, ways of overcoming them, power relations and expression of individual self. This theory was supported to find out the women`s status and social belief of girl's education in patriarchal society which was used in my study.

Conceptual Framework

A conceptual framework is an analytical tool with several variations and contexts. It can be applied in different categories of work where an overall picture is

needed. It is used to make conceptual distinctions and organize ideas. Strong conceptual frameworks capture something real and do this in a way that is easy to remember and apply (http://en.wikipedia.org/wiki/conceptual_framework).

As discussed above related literature, participation of girl`s in Mathematics at University level may depend under different variables. Generally, participation of girl`s students in Mathematics at University level

Especially in girls influence from teaching learning process, home environment, school environment, social variables, time variables and attitude towards mathematics (Giri, 2016).

In this research, the researcher introduced the phenomenological discussion, which is relevant for the interpretation of the findings of the study. This study tries to test the participation of girls in mathematics classroom on the basis of: classroom attendance, doing classwork, doing assignment, interaction with peers, interaction with teachers and involvement in extracurricular activities. And this study also focuses on to find out the problems faced by girl's students while learning mathematics.

For this study in Mathematics at University level. This includes social system, culture customs, and traditional effects of gender in society. Along with time variable are also played significant role on girl`s participation students in Mathematics. The researcher has developed the following framework with the help of those variables. It has been prepared a study framework especially with the help of the concept adopted by Rupakheti (2017), Mahato (2015) and Giri (2016).

figure 1: Conceptual framework of Participation of girls in mathematics at University level.

Participation of girls in mathematics class is measured by following factors:

Attendance

Number of days the student present in the classroom for study is measured by attendance. In this study one of the factors for evaluating the participation of girls is taken as attendance. Higher the number of attendances means higher the participation.

Doing assignment:

Assignment is another factor analysis of this study. Assignment is a work given by lecturer to do at home. I tried to analyze how many times the girls did their assignment in comparison with boys. Higher times the assignment is done, higher the participation in learning activities.

Doing Class work:

Class work is the involvement of student in given task for learning in the classroom during lectures. The girl's activities were observed during class lecture and compared with boys' activities. Higher the involvement in class activities represents high interest in learning.

Interaction with peer

For the analysis of learning interest, the interaction of student in classroom was also observed. It was done by watching how much each female talks to female and male. Whether she interacts in similar way in which she interacts with female or differently with boys. Then that was compared with interaction time of males.

Interaction with teacher

It represents how comfortable the girls are to interact with their teacher, any differences on that in between male teacher and female teacher or not. It also includes the response rate of boys and girls to their teacher.

Involvement in Extracurricular activities

I observed the involvement of male and female in extracurricular activities held on campus. The comparison is made the participation of male with female in extracurricular activities.

CHAPTER III

METHODS AND PROCEDURES

Since, research is the systematic and scientific study, the success of research depends upon the researcher well selection of methods and procedures. The method and procedures here refer to the whole procedural work researcher used for obtaining the set objective. The process involved throughout the whole work must be systematic and objective for the achievement of the objective and the success of work largely depends on the way it is performed. The methodological part of research is very importance in every research that serves as a guideline to obtain the set pre-determined objectives. Methodology provides a procedural guideline that helps the researcher to collect and analyze the data and to reach in point.

Here, the central focus was to investigate the participation of girls in classroom and the problems faced by girls in mathematic learning at M. Ed. Level. The methodology that has adopted during the study is as follows.

Research Design

This study was based on phenomenological research design. Phenomenology is an approach to qualitative research that focuses on the commonality of a lived experience within a particular group. The fundamental goal of the nature of the approach is to arrive at a description of the nature of the particular phenomenon (Creswell, 2013). This study was a qualitative research. The research design based on the conceptual themes.

My research has been focused on Tribhuvan University central department of Mathematics Education. This research has covered master level in T.U. It has also

included the experience of girls in mathematics education and also included the experiences of researcher own self.

Respondents of the Study

The population of this study was the all mathematics girls studying master level in Tribhuvan University. It has been selected only master level for this study because researcher`s purpose was not to study the participation of girls in all levels. Thus, It has been selected only Tribhuvan University. For first objective researcher select four mathematics classes on Central department of mathematics Education and for second objective researcher was selected five mathematics girls who are studying in sample four classes.

Data Collection Tools

There are various methods by which the data can be collected. Qualitative research can have variety of techniques of gathering information. For the data collection researcher can used interview, in depth study, observation, video & audio recording etc. The aim and purpose of data collection is to gather real descriptions of related field in order to produce clear & accurate descriptions of a particular aspect of human experiences (Creswell, 2003)

For collecting the required data of this study, classroom observation form and interview schedule were used as a tool. These tools were used to find out the participation of girls in learning mathematics and to find out the problems faced by girls while learning mathematics.

These tools and techniques are described below in details:

Classroom Observation Form

The observation in this study was conducted in M. ED mathematics classroom during mathematics lesson in order to further the understanding of the life experience of the learners. A total fifteen days of four mathematics classroom were observed. In order to generate deeper insight of problem investigated, I engaged with the girls as a participant's observer which is usually associated with qualitative research and requires the researcher to be present and participate in everyday settings and activities to enhance awareness and curiosity about the kind of interaction that takes place around the classroom.

Using classroom observation checklist (Appendix-A), I observed and noted the traits, behavior and conduct of the girls as they were learning mathematics in reference to their gender differences. The checklist that focuses on traits such as : asking and answering questions, raising of hands to call for the teacher's attention, setting quietly in class, moving around the classroom, completing class work in time, speaking and explaining sum to others and volunteering to illustrate sums on the whiteboard. In addition, the researcher observed the girl's discussion in group work on math's activities, in order to find out which gender is cooperative, like to work independently, like group work, lead others in group and is competitive in the conversation. The student's action, traits and conduct during the observed lessons formed the indicators for class participation which were drawn and expressed in term of either more, less or equal; depending on the number of occurrences in boys and girls during mathematics lesson. For example, when students raise their hands to answer teacher's question, the observer would count how many hands raised by boys and how many for girls. Then the recorded information describes shows whether more or less or equal number of hands has been raised by which gender. By the end of the

observation process the observer counts how many more/less or equal for each gender and makes conclusion of which gender participated the most or less.

Interview Schedule

Interview is a process of communication or interaction in which subject or interview gives the needed information verbally in a face to face situation. Interview is encouraged to respond towards the question after building a better rapport. There are many types of interview; typically direct interview was conducted with girls and gave in depth interview in this study. In this technique, that involves conducting intensive individual interviews with a small number of respondents to explore their perspectives on a particular idea, program or situation. For example, we might ask participants, staff and others associated with a program about their experiences and expectations related to the program, the thoughts they have concerning program operations, processes and outcomes and about any changes they perceive in themselves as a result of their involvement in the program (Boyce, 2006).

In this study, the researcher used interviews to investigate and prompt things that couldn't be observed such as the girl's perceptions, girl's problem while learning mathematics. So, researcher conducted face to face semi-structured interview for this purpose. I used to interview guide (Appendix-B) to maintain a systematic focus during the interview and collect the information from mathematics girls because semi-structured interview was used to discover in-depth understanding of people in the phenomenon under study.

Standardization of the tools

Reliability and validity are essential to the effectiveness of any data gathering procedure. Reliability is the degree of consistency that the instrument or procedure

demonstrates; whatever it is measuring, it does so consistently. Validity is that quality of a data-gathering instrument or procedure that enables it to measure what it is supposed to measure. Reliability is a necessary but not sufficient condition for validity. That is, a test must be reliable for it to be valid, but a test can be reliable and still not be valid.

For this study the both class observation form and interview guidelines were prepared based on the previous studies and sufficient literature review on the similar topic. So, the data can be said reliable and validity has been maintained.

Data Collection Procedures

The data collection was done using multiple methods and from multiple sources. It involved classroom observation and semi-structured interviews. The large part of the information was primarily based on classroom observation. Researcher used observation checklist to record the daily classroom occurrences and actions of the learners as they participated in a mathematics lesson. During the face to face interview, I used audio recorder to tape all the information based on the study topic.

Method of Data Analysis

In this study data analysis was done concurrently by classroom observation as well as interview technique. After observing 15 days researcher used terms such as more, less and equal to describe the variables of the level of participation in terms of boys and girls. In interview technique data which are obtained from interview were analyzed by researcher and the specific themes were obtained where theories were used to interpret the meaning of values, experience, opinions and behavior of respondent from the analyzed themes and answer the research questions. Being a

student of mathematics, researcher also included her own experience in each themes and classroom activities to justify this research.

In this study data analysis was done concurrently with data collection procedure. Lodico, Spaulding and Voegtle(2010) suggested that in a qualitative research; analysis of the data collected can occur concurrently and therefore guides the researcher throughout the data collection procedure. During classroom observation, there were some emerging issues such as a number of times the teacher point at a boy pupil or a girl pupil to answer question when both gender have raised their hands. These kinds of issues are noted down and keep it in the interviews time, it helps to ensure that the research questions and answers. Therefore, researcher did data transcription, coding, and developed themes in reference to the research questions. Data collected was analyzed using descriptive writing and later interpreted to make deeper understand and meaningful of the data collected for research discussion and recommendation of the finding. The researcher used terms such as more, less and equal to describe the variables of the levels of participation in terms of boys and girls.

CHAPTER IV

ANALYSIS AND INTERPRETATION OF DATA

The main focus of the study is to find out the participation of girls in mathematics and to find the problem faced by girl while learning mathematics. This chapter deals with the analysis and interpretation of the collected information from the case study. The researcher had used different types of data collecting tools in this study. Direct observation was done in the classroom. The classroom behavior of student and teacher was carefully observed and noted. The students' school and home environment and their behavior were evaluated by the researcher with the help of interview guideline. The researcher interviewed with the key girls mathematics students to find out their experience and problem faced by them. In the mathematics class the researcher had also noted the girl's regularity of collage, doing homework/assignment, doing class work, interaction with peers, and interaction with teachers and involve in extra-curricular activities.

The process of evaluating data using analytical and logical reasoning to examine each component of the data provided. This form of analysis is one of the many steps that must be completed when conducting research experiment. The data from various sources were gathered, reviewed and then analyzed to form some sort of finding and conclusion.

According to Willinson and Bhandarkar, analysis of data involves a large number of operations that are very closely related to each other. These operations are carried out with the aim of summarizing the data that has been collected and then

organizing. This summarized data in a way that helps in getting the answer to the various questions or may suggest hypothesis.

Section 1: Data analysis from Observation

The first objective of this research was to expand the girl's participation in mathematics. For this, I have prepared the observation form through which I obtained the data. I observed class on the basis of mainly six contents that are classroom attendance, doing class work, doing assignments, interaction with teacher, and interaction with peers and involve in extra-curricular activities. I have obtained various data from observation form. I have observed four mathematics classes for 15 days regularly. In order to find out the participation of girl students in mathematics, for this the researcher observed their daily activities by sitting back side of class room.

The analysis and interpretation of the obtained data is presented under the following themes:

-) Classroom attendance
-) Doing class work
-) Doing assignment
-) Interaction with teacher
-) Interaction with peers
-) Involve in extra-curricular activities

On the basis of above themes table 1 illustrate the gender differences in overall class participation activities that were recorded during the mathematics classroom observation. The observation checklist shows below indicates a good number of activities and the level of participation between boys and girls. It is revealed that boys have shown highest level of participation than girls especial when

it appears to have less raised hands in class to answer questions coming from the girls than in boys. Finally, the summary of the result from the classroom observation as following table.

Class Participation Indicators	Girls	Boys	Remarks from observation
raise hands teacher for attention	Less	More	Out of 10 hands raise 2 were girls.
Ask question most	Less	More	Boys raised their hands most to answer teacher`s questions in class. For every 10 raised hands 2 were girls.
lead others in group work	Less	More	Out of five group no one led by girls.
complete class assignment in time	Less	More	For every ten pupils to complete their class works in time boys were 8 while girls were 2. Boys showed effort to be first to receive ticks.
Likes to take work for marking	More	Less	Most boys took their books after teacher called them to do so.
Moves to teachers table to	Nil	Less	Boys were moving to the

ask questions.			teachers` desk but did not ask questions related to class work.
walking around the class	Nil	Nil	There was no unnecessary movement in the class.
Sat quietly	Less	More	Out of 5 pupils, all were boys. Boys were seen sited idle while others were busy doing class work.
Work independently.	Less	More	Boys worked individual even when it is group work task.
Likes to works in pairs.	More	Less	Girls talk to each other as they work.
Has textbook	More	Less	Every girl students has textbook but some boys doesn`t have.
Uses shared textbook	More	Less	The books were shared in group girls were more.
Last to complete class assignment.	More	Less	Out of the last seven pupils 4 were girls.
Involvement in extra-curricular activities	More	Less	

Table 1: Result obtained from observation

Throughout the observation process, as noted in this checklist, the students showed more gender differences than similarities in the way they learnt and participated in mathematics lessons and its related activities. In this checklist the researcher was recording the number of times an indicator occurs in a girl or a boy then makes tallying and later describes it as more, less or equal occurrences. From tallying process, a conclusion is derived of which gender does more or less of these indicators, and therefore, graded with greater participation rate than the other. In the table shown above therefore, our results suggest that learners display differences in the way learn and participate in a mathematics lesson.

Finally, I analyze and interpreted on the basis of themes related to classroom observation and my own experience:

a) Classroom attendance

In the observation period it was observed that, present girls are less than boys. When I was in class for observation continuously for 15 days, girls were on time in class in comparison to boys. Girls were more serious on attendance. In semester system, classroom regularity is needed for participation on board exam. So, girls were very sensitive for it. I have found that all students were present daily. Boys entered classroom after teacher entered but girls' students entered before teacher. Girls were already ready for study when teacher entered. In the observation period I found that girls were more discipline rather than boys.

After observing 15 days in the mathematics classroom I found about attendance of girls in mathematics classroom: All students (boys and girls) have regular attendance, girls students were came class in time where as boys were late, girls had more discipline comparison to boys, and all girls have text books.

b) Doing Class work

In the observation period it was seen that there were a smaller number of girls as compare to number of boys in all the classes. All the students were active when their teacher had been given class work. Boys were more confidence in doing class work as compared to girls. Most of the girls lacked confidence in solving the problem despite their knowledge. Frequently boys were sought help by the girls to solve their problem. Boys were always first to check their task with the teacher.

Finally, from mathematics classroom observation about girl's participation in doing class work is: all the girl students were active to start doing class work, many girls didn't have confidence, girls submitted after boys. So, the participation of girls for doing class work was less than that of boys.

c) Doing Assignment

In the observation period it was seen that all the students did their assignment in time. In the semester system assignment also has marks. So, all students were excited to submit assignment in time. It was found that the group work assignment was done with fully group co-operation. In case of group work boys were more excited to the comparison of girls. Boys had been leading the group.

From 15 days observation it was found that about the participation of girls in doing assignment was: all the girls students were submitted assignment in time, girls involvement in group work was not satisfactory as compared to boys, girls were more serious on doing assignment, girls had more discussion to do their friends about that the assignment in classroom.

d) Interaction with teachers

From observation it was found that girl's interaction with teacher is much less than that of boys. Most of the girls never asked questions to the teacher. Girls had

hesitation with teacher. Comparatively girls were familiar to interact with the female teacher rather than male teacher. In the female teacher`s class girls were more active in learning. They frequently asked questions and discussed in subject matter.

After mathematics classroom observation the participation of girls in interaction with teacher was girls were seen to be less interact with teacher, interaction of girls with male teacher was poor but girls were more comfortable with female teacher, many girls never asked question to the teacher, when teacher asked questions almost girls were down their head and boys student answered the teachers` questions..

e) Interaction with Peers

From observation it was found that girls had more interaction with girls than with boys. Girls interacted with their friends about class work, assignment and share their happiness and sorrow with their girlfriend. Girls asked the boys about their subject matter only but they shared about their household problem with girls. In the classroom girls were more disciplined rather than boys. For doing class work girls asked boys students more often than teacher. While they were confused they asked with talent students. So I concluded that girl student`s interaction with peers was good.

After observing the 15 days mathematics class it was seen that girls had more interaction with peers rather than boys, they consulted with boys about homework, class work and discussion about subject matter also, girls asked question with classmate rather than teacher while they were confused.

f) Involve in Extra- curricular Activities

From the class observation it was found that there were not more extra-curricular activities in the mathematics class. Some extra activities I had observed

were; discussion with teacher about out of subject matter in the classroom, classroom leading, organizing administrating program like: farewell program, festival celebration program, welcome program. I found that girls were silence in extra-curricular activities. Only one and two girls were participated with the force of boy students. So, the involvement in extra-curricular activities of girls was poor.

After observing mathematics class and my own experience it was found that girls' participation in extra-curricular activities was poor, boys leading the whole classroom while girls were silent in this field, girls were less interested in extra-curricular activities.

From the above observation of different classes on many days, it was found that girls seem to be less participated in learning mathematics. Besides there following facts were found.

-) Some teacher behaved girls properly whereas some teacher behaved moderately. Girl students seemed to be active when they were behaved properly by their teachers
-) Girls were seemed to be poor in terms of their activities. Most of the girls remained silent in learning in comparison to boys
-) All of the girls had enough materials for learning
-) Girls seemed to be good in completing assignment and poor in group work and presentation
-) I found in every class, there was proper relationship between boys and girls for enhancing knowledge
-) Girls seemed to be less interaction with male teacher but good interaction with female teacher
-) All of the girls did not involve in extra activities

-) Moderate cooperation was found from girls in learning
-) All of the girls were interested in learning and attendance of girls students were almost regular

From the above analysis and interpretation of data obtained from observation checklist, it was found that girl`s participation in learning mathematics was poor and low in comparison to boys. Similarly, it was found that the environment of class such as teacher`s behavior availability of materials, interaction between girls and teachers, girls and boys, involvement of girls in group work, presentation, extra activities and their interest affect the girls participation in learning mathematics.

From the feminist theory, review and other findings, I claimed that participation and their achievement of girls in mathematics depends on their nature in higher level. Similarly, girl`s behavior, friend`s circle, confidence level, teacher`s attitude, teaching technique, classroom environment, teaching materials etc. play a vital role in encourage girls for participation in mathematics learning.

Section 2: Problem Faced by Girl Students While Learning Mathematics at University Level

This section discusses about the problems faced by girl students while learning mathematics at University level. which are from classroom observation and interview schedule.

Lack of Family Support

Parmer, Harkness and Super (2004) state parents culture belief system influence on the organization of children`s environment of learning and development. In the society with strong family values, parents are the key person of family whatever they decide about their children becomes applicable and education level is likely to influence their children learning and development process. In our society the

role of daughter in their home is negligible. Girls doesn't decides herself about her everything like study, marriage. Especially her father decide what she study and when get married.

Family thinks that daughter is matter of sending to others home. So, many daughters not get permission for higher education. Even if they got chance to study higher education they wouldn't be free to choose subject. According to their interest parent thinks that mathematics is very hard subject so our daughter cannot study.

This research student A shares her experience in this ways: *'My parents believe that basic education is sufficient for girls. They think that marriage of daughter is their greater responsibility than her study that's why parents focused only on girl's household work rather than study. Forcedly, I passed Bachelor level. After I passed Bachelor level, my parents weren't ready for sending me to kathmandu alone for M.ED level. Now I am here with my brother'*. Similarly student B said *'My parents think that daughter is matter of sending to others home. They have the concept that basic education is sufficient for girls. My parents send my brother abroad for study but they didn't want to send me on Kathmandu. They doesn't support me for higher study with mathematics subject. They wanted to go to Kathmandu and study major mathematics. But my parents didn't agree with me. They wanted daughter will join easy subject like Nepali, health, population and do household work'*. The stories of the participants A and B and participant E portray the same phenomenon that sons are more preferred to daughter. She said *My parents think that daughter must have the knowledge of household works rather than study so that they will be able to handle their house after marriage. They always told me don't choose mathematics subjects it is not for daughter. It is for son only.*

From above experience it indicates that parents don't give more priority to daughter higher study than their son's. UNICEF (2001) shows that although attitudes towards believe the education of girls have begun to change even in traditional societies many parents still that investment in a girls education is wasted when she is simply going to be married and work in another household. Sharma (2000) also shows that socially and culturally boys are allowed to go outside the house any time even away from home for their education but most parents still don't allows females to go out of the home alone.

Early Marriage

In Nepal 40% of girls are married by the age of 15 (Census 2011). In the current policy and practice of Nepal girls marriage age is 20\21 years where as boys is 24\25. In 20\21 years girls are studying in Bachelors level. On University level almost girls are married. Early marriage, early pregnancy and motherhood responsibility household work and duties are other aspects for the girls with deprived them of getting the higher education.

In this line student C's experience, *When I studied in Bachelor third year my parents married me without my permission. After finishing bachelor my family and husband didn't give permission for M.ED. I loss 3 years and that time I gave birth of daughter. When my daughter is 3 years then I joined M.ED. I have many responsibilities with home and daughter. I can't go college regularly. I didn't take homework timely. I didn't have enough time for my study.* Experience of student D *It's difficult to manage carrier and household works for girl after marriage. When I was in intermediate level parents forced me a lot for marriage. Fortunately I got chance to study Bachelor level if I was married at intermediate level mathematics is time*

consuming subject but after marriage it is difficult to manage time. After marriage the responsibilities of girls were increasing day to day that kills the interest in learning. So marriage bounds the girls study.

According to above experience it was clear that marriage bounds women higher study in mathematics and kill their interest for study. So early marriage is the major problem faced by Nepali girls studying mathematics at University level.

Teacher`s behavior towards girls

In the teaching field, male teacher behaves boys are talented than girls so they ask question mostly boys in the classroom. Teacher cannot understand girl related problem.

In Nepali context, there are a few women teacher in mathematics at University level to the comparison of male teacher. The study shows that the presence of women teachers in school boosts the confidence of parents, encouraging them to send their daughters to school, especially in rural and conservative areas. These female teachers are likely to act as role models for girls students. They can also be supportive factors to create girl-friendly environment in schools. A research study by UNESCO (2006) shows the positive correlation between the number of women teachers and girl`s enrolment in school. But due to lack of sufficient qualified women, there are very few female teachers in school and colleges.

In this topic students A said *in my collage there are only two female mathematics teacher. We girls are familiar to female teacher more than male teacher. Male teacher not understand girls students problems but female teacher feel our problem. If there are female teachers in school and collage we feel secure and*

encouraged from the female teachers. Students B`s experience Girls have to face family tension. They have family responsibilities and are bounded by the family rules and regulations. Nepalese women don`t have freedom like women in develop countries. There is no place and no person to share their problems and difficulties regarding their study. If there were female mathematics teacher they understand our problem and teaching by using to different strategies. Participants D have same experience as above. She said I found very few female lecturers or professors participating when there is mathematical training, programs and classes. There shouldn`t be lots of female mathematics teachers and mathematician as role model in our society. Due to lack of female role models, girls are discouraged to study mathematics in higher level. From school level to now we girls are hesitate with male teacher. We cannot share our problem with male teacher and in the classroom teacher think that girls are weak in mathematics so they do not give priority to girls.

Consider that society is not interested in investing money on girl`s education as they have to be someone`s. Parents are unaware of the benefits of girl`s education. If the teacher is female, the society can realize the importance of girl`s education. There are very few women teachers in schools and colleges and they are few found in position in colleges. Their voices are excluded of female teacher. There need to be sufficient number of women teachers in the academic field. Hence, policies and program need to focus on recruitment of female teachers in the universities and colleges.

Social belief on mathematics and girls

The term of 'belief' is defined as some kind of mental representation of something, organized from past experience as well as associated beliefs, attitudes and

conceptions (Sam, 1999). In the context of my analysis images of mathematics can be understood as mental representations or views mathematics constructed as a result of social experiences including school, parents, textbooks and other resources. I come to know through Ernest (as cited in Sam, 1999) that many people's image of mathematics negatively via the metaphors of mathematics as cold, abstract, many cultures, largely masculine discipline. For my study, I talked to the participants. From their opinions I found there is the social image that mathematics is a difficult subject which is only for intelligent one. It is also male dominated subject. While talking about the female and higher level mathematics education with my participants, Students D experience *negatively impact of socially belief system of mathematics that mathematics is hard subject. It also follows rote learning and memorizing the formulae which is decreasing the interest of female students towards mathematics. Next things, girls are not free to learn due to social and cultural barriers. For example, if a son returns home at 8 pm then there is no issue of doubt, but if a daughter does the same then next time she doesn't the chance to go out of house for the study too because parents are also bounded by social boundaries.* Students B experience *Girls are socially treated as an individual having low self esteem and confidence. Our society has the concept that they cannot study mathematics in higher level due to its complication. They also believed that girls cannot give sufficient time for mathematics which is required for it. Psychologically girls are treated weakly as mathematics, they don't choose it due to such social and cultural belief system.* Participants C also have this kind of experience. She said *there is a social belief system that girls cannot study mathematics properly. This influences on choosing mathematics subject for the girls. Still, if I talked with people, they asked about my professional subject. Then people are surprised and make their eyes big and say, "oh*

ho mathematics" such belief system is there in our society and girls couldn't develop their confidence in studying mathematics all higher level.

In this regards, Lim and Ernest (1998) argue that negative public images of mathematics might be one of the factors that has led to the decrease in student`s enrollment in mathematics and science at instructions of higher education. Further they argue that mathematics is taken as a subject of male concern, a hard subject and just for a cleaver one. Sam (1999) also found that mathematics and science have always been stereotyped as strongly male or masculine subject. It can be due to reason that most mathematics teachers in secondary school and large majority of mathematics were found to men.

Economical Problem

Another major problem of Nepali is poor economic status. Nepal is under development country. In mathematics education, a great deal with of ground-breaking work, over many years on gender and ethnicity are established which are the attributes worthy of continuing consideration (Fennema & Leder 1990 as cited in Lim & Pateman 2013). Research has shown that impact of poverty has a negative correlation to student`s performance in general (Bracey 2009). Most of the students in M.ED girls come from middle socio-economic condition. The result is that they are frequently absent in college and if they are in college they are on full of stress they are not mentally healthy so financial problem effect the girls participation in mathematics class. Due to the low economic status many higher level mathematics students involve in other side job. A report of ministry states: Working beyond the college hours reduces the achievement of the students.

On this problem my participants experience are as follows; Participant C said *I am from middle class family. My parents are farmer. They didn't have money for my education. I used to feel in tension about how I collect money for my college fee, room rent and materials. By the causes of financial problem I couldn't give full time for study and in the classroom I was always tension. So I didn't understand mathematics teacher's class. That's why low economic status of the family is a factor of low participation of girls in higher level mathematics education.* On the same way Participant A said *economic status of my family is poor. There is no other person for earning money. It is difficult to pay college fee, room rent and etc. So I have to engage in another part time work. I take tuition classes and home tuition. I have to sent money for my brother and sister's education. Mathematics is very difficult subject it needs to practice more. But I don't have sufficient time for practice. So my study is not well.* Participant E has same kind of experience. She said *Low economic status of the family is a factor of low participation of girls in higher level mathematics education. For completing University level girls have to gone out of their house. It is so expensive for middle class family. So, if there would be scholarship and hostel facilities for the girls then they could easily get chance to study in city taking major subject of their choice. Government policies and visions are good regarding female education but implementation is poor. There should be effective implementation regarding girls education. Girls education program are more focused on school level especially secondary education but higher education doesn't seem preferable.*

From above participant experience financial problem is the main problem on girl students faced in learning mathematics.

CHAPTER-V

SUMMARY, FINDINGS, CONCLUSION AND RECOMMENDATIONS

This chapter deals with the findings, conclusion and recommendation of the study. After the rigorous analysis and interpretation of collected data, the findings of the study have been derived and conclusion has been made on the basis of finding, recommendations have been forwarded in different levels.

Summary

This study was based on the phenomenological study. The study design has utilized on qualitative research approach. The main purpose of the study was to find the girls` participation in mathematics and to identify the problems faced by girls while learning mathematics. The population of the study consisted of the all girls students who are studying in mathematics at Department of Mathematics education in the academic year 2074/075. For the Phenomenological purpose, the researcher employed purposive sampling techniques to select sample classroom and sample girls in the first stage. It has been selected four mathematics classes and five mathematics girls. The researcher used a one set of observation form and interview questions for collecting information. Observation form was used only fulfill the first objective i.e. to find out the participation of girls in mathematics. Interview schedule was used to find out the problems faced by girls while learning mathematics. After collecting data researcher analyze and interpret with data descriptive method.

Finding

The main aim of my research was to find out the participation of girls in mathematics and to find out the problem faced by girl students while learning mathematics. To achieve the objectives, I have used the observation form and

interview schedule as a data collection tools. The data obtained from these tools are analyzed using literature and from data collection tools. On the basis of analysis of data interpretation of result and researcher own experience. The following objective wise findings have been derived.

Participation of girls in Learning Mathematics

-) Based on the 15 days class observation, it was found that girls have regular classroom attendance, they have good discipline in the classroom and they comes college in time rather than boys.
-) On the observation it was found that girls students were poor on doing class work. Boys were always faster than girls on class work summit.
-) It was found that all students (boys & girls) doing assignment in time. They were excited on doing assignment. So girls were good on doing assignment.
-) According to observation it was found that girl's interaction with their peers was not weak. It means the relationship between boys and girls were good in the classroom.
-) The interaction with girl's students and teacher was not satisfied. It means the participation of girls the interaction of teacher was weak.
-) Girls weren't participate in the extra-curricular activities.

Finally we concluded that the participation of girls in mathematics at University is not satisfied it is not equal to boys. But in few aspect girls were better than boys like classroom attendance and interaction with peers. Girls have low participation on doing class work, doing assignment, involve in extra-curricular activities and interaction with teacher.

Problems Faced by girl`s students while learning Mathematics

-) The result revealed that the family, society, teacher support, government policy and provision isn`t favor with girls.
-) It was found that lack of family support is the major problem of girls. Most of the girls from the middle class family and illiterate family.
-) It was found that high economic background influence in learning mathematics and students from high economic background do better in learning due to extra activities, tuition class and availability of materials etc.
-) It was found that the majority of participants have same problem that is early marriage.
-) Exploitation and oppression of women on grounds of tradition, superstition, and conservative beliefs are contributing to unequal treatment between sons and daughters.
-) The patriarchal social structure and more preference given to boys are creating inequity and inequality in the case of girl`s higher education.
-) The major problem was University level education is centralized so girls don`t have permission for out of their house for higher study.

Conclusions

Mathematics is a gateway to many areas of further study. The participation of girl`s students in mathematics is very low. Society as a whole believed that female is mathematically less capable than male. This belief is communicated by parents and teachers to students. Girls come to view their failures in mathematics as evidence that they indeed feel inferior and view their success as flunks. This reinforced the belief

that they are not capable of doing well in mathematics. So they are not participating in mathematics classroom.

In the context of Nepal mathematics education is regarded as one of the important subject. It is taken as the subject of creative mind and practical. The current scenario of learning mathematics is different than the past. In previous time learning mathematics was regarded as the asset of boys where girls seem to be weak in mathematics learning. But in present both girls and boy seems to be interested in learning mathematics and show the active participation. However, the participation of girls in learning mathematics is comparatively lower than boys. Though, girls show their interest in learning mathematics, their participation seems to be weak due to various factors like school environment related factor, home environment, early married, economic status of family, teacher related factors, social factor and interest of the girls. In our patriarchal society girls mathematics students faced many problem while learning mathematics i.e. Lack of family support, lack of female mathematics teacher, economical problem, social belief about mathematics and girls students.

The major focus of this study was to analyze girl`s participation and the problem faced by girls students while learning mathematics at University level. Since there are very few researches have been carried out in girls participation, this study is a bit different from other researches which provide valuable sources and guidelines for researchers and other practitioners to know about the participation and problem faced by girls.

At last, it is concluded that girls are equally talented and should be given equal facilities at home and school to learn mathematics. Parent and teachers should not consider boys are assert and daughter as a liability.

Recommendation for Further Study

The conclusion of this study cannot be generalized to all University level`s girl students and to all areas (rural and urban) due to the limitations contained in this study. Thus, after analyzing the conclusions and implications of the study the researcher has made the following recommendations or suggestions for further study to validate the present study findings.

-) Almost of the girl students are weak in mathematics and are not participation in mathematics education programs for girl students. Research should be focused in this area.
-) The study shows that the girl`s participation in learning mathematics is low comparison to boys. So to increase the girl participation concern authority, policy maker and administration should pay their special attention to girl students and design a better plan to promote their education level.
-) Teacher behavior towards the girl students should be equal to boys so that girls may be motivated to participate in mathematics learning.
-) There is also a need of female teacher`s recruitment in colleges and universities. If female teachers are recruited, they can play as role models for girls. In this respect, gender sensitization program can also be launched in the society.
-) It is helpful for teachers, students, researchers, institutions, educationist, curriculum designer and policy maker.
-) Parents should invest and pay attention toward their daughter`s higher education and make favorable home environment for learning mathematics.

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APPENDIX - A CLASSROOM OBSERVATION FORM

Class Participation Indicators	Girls	Boys	Remarks from observation
raise hands teacher for attention			
Ask question most			
Take more time in speaking a sum			
lead others in group work			
complete class assignment in time			
Likes to take work for marking			
Moves to teachers table to ask questions.			
walking around the class			
Sat quietly			
Work independently.			
Likes to works in pairs.			
Has textbook			
Uses shared textbook			
Last to complete class assignment.			

Table 2: Result obtained from observation

Source: Ramtu Salim, 2014