GIRLS' PARTICIPATION IN MATHEMATICS EDUCATION AT THE UNIVERSITY LEVEL

A

THESIS

BY

RENUKA KUMARI BHATT

IN PARTIAL FULFILLMENT OF THE REQUIREMENT

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Letter of Certificate

This is to certify that **Ms. Renuka Kumari Bhatt** a student of the academic year **2075/76** with campus Roll No. **13** exam Roll No. **7528215**. Thesis Number **1775** and T.U. Registration No. **9-2-156-32-2013** has completed this thesis under the supervision and guidance of Mr. Krishna Prashad Bhatt during the period prescribed by the rules and regulations of Tribhuvan University Kirtipur, Kathmandu, Nepal. The thesis entitled **"Girls' Participation in Mathematics Education at University Level"** has been prepared based on the result of her investigation conducted during the prescribed period under the department of Mathematics Education, Central Department of Education, University Campus, Kirtipur, Kathmandu, Nepal. I recommend that her thesis be submitted for evaluation as the partial requirement to award the degree of Master of education.

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Letter of Approval

This thesis entitled **"Girls' Participation in Mathematics Education at University Level"** submitted by **Ms. Renuka Kumari Bhatt** to partial fulfillment of the requirement for the degree of master of Education has been approved.

Viva-voice Committee	**Signature**
Mr. Abatar Subedi (Chairman)	...…….
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Mr. Krishna Prashad Bhatt (Supervisor)	……

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Recommendation for Acceptance

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Dedication

Honestly dedicated

To

My parents

Nande Bhatt & Kalu Devi Bhatt

Declaration

This thesis contains no material that has been submitted for the award of another degree in any institution. To the best of my knowledge and belief, this thesis contains no previously published materials by any authors, unless due acknowledgment has been made.

…….……

Renuka Kumari Bhatt

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Abstract

This study focused on girls' participation in mathematics education at the university level. The objectives of this study was to identify girls' participation in mathematics education at the university level and to explore factors that affect the participation of girl's in learning mathematics at the university level. This study was based on qualitative research design as well as case study approach to explore the multiple realities. To meet the objectives, the researcher has selected two mathematics classrooms and three mathematics girls who are studying mathematics at the Central Department of Mathematics Education T.U, two mathematics teachers, and one female rights activist, as the sample of this study. Classrooms and girls were selected based on purposive sampling. In this study researcher used classroom observation form and in-depth interviews. For this study, the researcher observed fifteen days in deeply on sample classrooms and sample girls. The collected data were analyzed with the help of the descriptive method.

The finding of this case study shows that the participation of girls in mathematics at the university level is weak as compared to boys on classroom regularity, involvement in group work, and involvement in peer work presentation skills and on some approaches, girls are equally participating like doing home assignment, interaction with teachers and peer in the mathematics classroom. The main factors affecting the girl's participation in mathematics education are perception of mathematics as a challenging subject, teachers' attitudes towards girls' students, sociocultural factors, self-interest in mathematics, completion of graduation in conjugal life and complete graduation after graduation baby birth.

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Chapter I

Introduction

This chapter presents the background of the study, the statement of the problem, the objective of the study, the justification of the study, the delimitation of the study, and the definition of related terminology.

Background of the Study

"Mathematics is one of the major subjects which helps to solve day-to-day needs. It is the basic tool of communication like a language. Mathematics is important in every step of life and science, commerce, and even in research for that mathematical knowledge is very essential" (Acharya, 2074).In the context of Nepal Gender disparity in educational attainment is a problem. In our setting, female students may be less interested in mathematics beyond school. There are a lot of reasons why girls don't like mathematics at higher levels. The parents may place less emphasis on their daughters, and their daughters do not have the same opportunities as their sons. Another factor that may prevent women from studying mathematics at a higher level is early marriage. They are under additional pressure to take care of the house and complete their responsibilities. Another social taboo is the belief that women are more inclined to take on the challenge of learning a difficult subject than men are. As a result, in our setting, women take care of and feed children more than men do. As a result, gender issues pose a greater challenge when it comes to teaching and learning mathematics, and providing boys and girls with equal opportunities in schools. Many girls face social obstacles to attending school (Panthi & Belbase, 2017).

"Sex differences in mathematics participation competencies in mathematics is a critical skill directly related to education and occupational choices. Yet compared to

males, females are less likely to enroll in advanced level mathematics courses and aspire to mathematically oriented careers" (Eccles (Parsons), 1984). Essentially, most girls from the school level to the university level do not like to select mathematics as a major subject. Because there are many causes of girls' difficulties in learning mathematics which are the home environment, social environment, teaching-learning process, self-interest, lack of motivation, failure in examination, negative attitudes towards mathematics, early married, no sufficient time for practice, etc.

Mathematics was very closely related to our practical life, this implies that it was not only the subject for formal schooling but also related to every activity of human beings. So it was essential to invent its many disciplines and to develop them ahead according to the necessity of solving many problems faced by the present situation (Luitel, 2019).

"Mathematical is the technical subject which needs more time to practice and high attendance to learn but by nature, such qualities are found in few girls only"(Ghimire, 2019). Mathematics needs much time to practice but most girls don't get enough time to practice it because they have to look after their household work. So most of the girls do not get a chance of higher study because of their household work, and lack of support from parents, teachers, and peers, and girls have no confidence to pass the examination. It is very difficult for them to complete the primary circle of education. Socioeconomic condition also affected their education. Due to the lack of educational awareness among parents. Girls are deprived of access to and opportunities for education. Gender differences can be seen in mathematical achievement which is why gender difference has been taken as a burning issue in mathematics education (Nepali, 2022). These difficulties are faced by girls' students at the university level so girls do not actively participate in mathematics education.

Because of the strict environment in Nepal, women are not allowed to attend school. For instance, there is still a perception that girls should not attend school and should only participate in family chores. Female enrollment in math classes is consistently low, at least in my experience. I believe that girls may perceive mathematics as a male-dominated subject that is challenging to integrate into their sense of gender. The cultural norms regarding who belongs in mathematics may have been internalized by girls. A teacher also observed that girls lack confidence in their ability to perform well in math.

Women's participation in educational activities is restricted in our traditional society due to cultural barriers that keep them at home. The low participation rate of girls in mathematical education has long-term effects on education. As a result, it's critical to find ways to inspire more girls to teach math and other subjects. As a result, researching the topic is of the utmost importance. In Nepal, women have very little access to economic, intellectual, social, and political opportunities. Similarly, girls have very little access to mathematics education at the university level when compared to boys.

Statement Problem

"This study attempts to find out girls' participation and girls' difficulties in learning mathematics at the university level in the central department of mathematics education. More than three decades now a great body of research study have been conducted to address the issues of gender disparities in mathematics education across the globe as a result of the minimal participation of females in mathematics education in higher level mathematics" (Practices, 2020). In our context, most of the students at the higher secondary level do not like to select mathematics subject as a major subject due to the possibility of failure in examinations.

Nepal has a long history of mathematics education and teaching. In Nepal, mathematics is taught as a subject in schools and colleges and is included in all levels of the curriculum. However, except in cases where the subject is taught as a requirement, the number of female students enrolled in mathematics courses at schools and colleges, particularly at higher levels, is extremely low. Nevertheless, the fluctuating percentage of female students enrolled in mathematics is cause for concern. From 2012/13 to 2016/17, there was only 13.53 percent of all mathematics students were female. This shows that the quantity of young lady understudies in math is still low when contrasted with the complete number of understudies which has its effect not just on the number of young lady understudies ready to select math for higher examinations yet additionally on the people who look to fabricate a profession in Science, Innovation, Designing, Development and different regions where math is viewed as an essential (Shakya, 2021).

"Mathematics provides an effective way of building mental discipline and encourages logical reasoning and mental rigor." But girls' participation in mathematics education was very low. In recent years great public concern about women's capability and deduction in mathematics. Reading newspapers and magazines one might conclude that most women are paralyzed with mathematics anxiety. In general, girls were lack of participation in mathematics education. Even though 51.04% of Nepal's population is female but why there is a lack of participation in mathematics education? Realizing that I become interested in this topic. So from this topic, I will find out the contemporary situation of girls' participation in mathematics education. Also, this study focused on identifying the girl's participation in mathematics education and exploring the factors that affecting the girls' participation in learning mathematics.

When I was studying at the middle school and campus level and currently studying at the university level, from my personal experience and the review of the literature I did, I saw that the participation of female students in mathematics education was less than that of male students. Is it less? Realizing that, I became interested in studying at this university.

Research Questions

1. Why the participation seems less to reference to the boy's students in mathematics?
2. What are the frequent problems faced by girls students in learning mathematics?

Objectives of the Study

Every research needs objectives, without the destination, nothing can be achieved. Therefore, the main objective of the study was as follows:

1. To identify girls' participation in mathematics education at the university level
2. To explore factors that affect the girls' participation in learning mathematics education at the university level

Justification of the Study

The justification of the study is part of the introduction of the research. It should determine who benefit from the study and how that specific audience will benefit from its finding. The study of the significance of the reason for the result of this study would help to identify some of the causes of girls' difficulties in learning mathematics education at the university level. The justification of this study can be mentioned as followings:

- It helps to identify the girl's participation in mathematics education at the university level.

- It helps to find the girl's difficulties in learning mathematics.
- It helps to encourage the girl's students to learn mathematics.
- It helps to bring a positive attitude to learning mathematics.
- It helps to find a major factor that affects the girl's participation in learning mathematics.
- This study help mathematics teacher with effective teaching.
- This study helps to minimize the failure rate in mathematics.

Delimitation of the Study

The study was limited to identifying the girl's participation in learning mathematics at the university level and exploring factors that affect the participation of girls in learning mathematics at the university level. It only focused on the girl's participation in mathematics education at the university level. This study was carried out only Central Department of Mathematics Education Kirtipur, Kathmandu. Thus, this study had some limitations which are listed below:

- This study involved girl's students and subject teachers of selected universities only.
- This study was based on qualitative research with a case study approach.
- This study was limited only to Tribhuvan University Central Department of Mathematics Education.
- This study was limited only to the girl's students who study at Tribhuvan University.
- This study was based on observation and interviews.

Definition of Key Terms

Students. In this study, the student refers to those who are enrolled at the university level in the academic year 2075/76. And only here do students refer to only girls' students.

Participation. The period participation is described as attending mathematics classrooms regularly, interacting with teachers and peers, presenting skills, and doing the home assignment.

University level. University level refers to the Tribhuvan university central department of mathematics education Kirtipur.

Chapter II

Review of Related Literature

The review of related literature involves the systematic identification, location, and analysis of documents containing information related to the research problem (Khanal, 2077). This chapter deals with the related literature about girls' participation in learning mathematics education at the university level. The main purpose of the review of related literature was to find out what works have been done in the area of the study research problem under study and what has not been in the field of the research study being undertaken. The review of related literature helps to make the concept clear for the study and directed to analyze and interpreted the data.

Empirical Literature

Rupakheti(2017), did research entitle 'Girl's participation in mathematics at the university level'. The main objective of this study was to identify to explore the causes of low participation in mathematics at the university level and to find out the sociocultural dimensions that influence the participation of girls in higher-level mathematics education. Her study was a qualitative research design and auto-ethnography approach to explore the multiple realities through the method of interview and observation. She found that there is low girl's participation in mathematics classrooms. Girls' students have many difficulties in learning mathematics which are early marriage, parental belief system, the public image of mathematics, traditional teaching-learning activities, and family's socioeconomic status and discrimination in a classroom.

Devkota(2019), conduct her thesis on the topic "Participation of girls in mathematics". This is survey research that attempts to describe the participation level of girls' students in secondary-level mathematics and to analyze the participation of

girls. This study shows that the participation of girls' students is low in comparison to boys in mathematics. The main factors that affect the participation of girls are a male-dominated society, less priority given by a parent to their daughters than sons, different errors made by students in solving mathematical problems, the home environment, the school environment, the teaching-learning process, drills, and pictures.

Ghimire(2019), did research entitle "Participation of girl's in mathematics at university level "Which shows that the participation of girl's in mathematics isn't similar to boys. Girls are weak rather than boys in some approaches that are leading the group, classroom submission, and being involved in extra-curricular activities. She has also found that girls have many difficulties in learning mathematics. Early married is the main problem faced by girls. . Thus there is low participation of girl's in higher-level mathematics. It also concluded that social belief systems and teacher behavior towards girls would be positive for empowering girls in University Education.

Luitel(2019), researched "Participation of Students in Mathematics Classroom". The major objective of this study was to explore the participation of low-achiever and high-achiever students in the mathematics classroom and to analyze the student's interaction in the mathematics classroom. He used a qualitative research design as well as a case study approach to explore the participation of low-achiever and high-achiever students in the mathematics classroom and a purposive sampling method was used to select the sample. The finding of her study was that the time during at home, learning ability, regularity, interaction with peers, and teacher classroom activities were between low-achiever and high-achiever students. The student was not actively participated in mathematics learning. The low achiever

students were lack of participation in the mathematics classroom and the high achiever students most participated in the mathematics classroom. But high achiever students regularly come to the school and they interact with peers and teachers as well. They participated in extra activities. Generally, girls' students were less interested in teachers and peers than boys' students.

K.C. (2021), did a study on "Participation of girls in learning mathematics". The objective is to analyze the participation of girl's in learning mathematics at the secondary level and to suggest possible remedies to improve girls' participation in learning mathematics. She used qualitative research design. Twenty girls' students and four mathematics teachers were the sample of her study and selected these samples by the purposive sampling procedure. She has used classroom observation as a research tool for data collection. Her study shows that girls' participation in mathematics especially is affected by the nature of the curriculum, teaching method, student attitude towards mathematics, tuition time they take, peer interaction, school environment, and parental involvement. Girl students in the Kathmandu district have low participation in learning mathematics because of the lack of conceptual knowledge and lack of enough tuition time at home.

Mandal(2021), did her research on the topic "Girl's low interest in higher level learning mathematics". The main objective of this study is to find out the ways to increase the participation of girls in higher mathematics courses and to find out the ways to increase the participation of girls in higher mathematics courses. This study was qualitative as well as descriptive in nature. Class observation, interview schedule, and focus group discussion were the data collection tools of her research. She found that the low interest of girls in higher level learning mathematics due to any reason which as the perceived difficulty of the subject resulting in decreased interest and

ultimately low achievement, lack of self-confidence along with anxiety is another important contributing factor for low interest and achievement, negative teacher attitudes, negative teacher attitudes, negative stereotypes about girl's math abilities, etc. decreases girls motivation, self-confidence which ultimately results in low interest and achievement in mathematics, the cultural belief that mathematics is a male domain, lack of time for mathematics at home for girls are factors contributing for gender differences i.e. low achievement of the girl's in comparison to boys in mathematics, lack of knowledge about mathematics careers entail and lack of Motivation.

Nepali(2022), study on "Promoting girls in learning mathematics: A case study". The main objective of her study was to explore the factors that affect girls' achievement in mathematics and also to identify the strategies taken by the school for improving girls' achievement in mathematics at the secondary level. The descriptive case study approach was adopted to conduct the study for convenience under the qualitative research method. In-depth interviews, classroom observation, and document reviews were used as a tool for data collection. She found that family-related factors such as parents' education, support of parents, economic status, and household work, school-related factors such as class size, teacher's techniques of teaching mathematics, personal related factors such as watching TV, playing games, prior achievement and interest of learner and social factors such as male-dominated society, social belief and culture are the main affecting factors in mathematics achievement of girls students. And also, this study found that girls were much more affected by established norms and values because they had to be involved in the whole household work to festival's cultures and household work distribution of work at home which was the cause of low achievement of girls' students in mathematics.

Thus gender difference was found in the mathematics learning environment at home which was the cause of affecting factors of girls' achievement in mathematics learning.

Yadav(2022), researched the thesis entitled "Participation of girls' students in mathematics". The main objectives of this study were to explore the participation of girl's students in mathematics and to examine the factor that affects the participation of girl's students in mathematics. To fulfill the objectives of the study, three secondary schools were selected randomly from all schools of the Mahottari district including all three government schools. This found that the female students did not finish homework every day due to lack of time, home environment, attitude towards mathematics, economic status, and social background that affects the participation of girl's students in mathematics. Our society is male dominant society, parents discriminate against their children as boys and girls. Parents love only sons and parents do not support their daughters to learn mathematics. Also, their parents do not provide learning materials. These were the factors that affect girls' participation in mathematics.

Iipinge(2014) did a study on the topic "Socio-Cultural Factors that Influence Girl's Participation in Mathematics in Secondary schools in The Oshana Education Region". This study finds out how socio-cultural factors (Traditions, Culture, norms, and beliefs) influenced the girl's participation in mathematics in the Oshana Education Region. This study was of mixed research design that employed both quantitative and qualitative approaches to gathering the data. The data were obtained from 216 girls in grades 11 and 12 classes who were randomly selected from eight secondary schools in the Oshana Education Region. A questionnaire comprising both closed-ended and open-ended questions was used to obtain information from the sample on how socio-

cultural factors influenced girls' participation in mathematics in the Oshana education system Region. This study found that the participation of girls was influenced by cultural beliefs about child-rearing, practices, and gender role stereotypes in the family. Additional barriers to girls' participation and learning mathematics included lack of support from the parents, teacher, and peers as well as masculine belief that mathematics is difficult the findings seem to suggest the need to motivate girls starting from primary school to actively from in the learning of mathematics. This study recommends empowering and preparing girls socially and mentally to encourage them to study mathematics beyond secondary school.

Practices(2020) did research entitle "Female student's Participation in Mathematics Education at the University Level in Ghana". The main purpose of this study was to investigate female student participation in mathematics at the university level. It considered 99 females studying at the university level of Cape Coast and the University of Education Wennba. The study used a descriptive survey design to analyze both qualitative and quantitate data gathered from respondents. The study revealed among other things that the trend of enrolment of female students in mathematics education is on the decline. Also, the study revealed that enjoyment derive from studying mathematics education, career opportunities in mathematics education, desire to study mathematics education, and interest in mathematics education, were some of the reasons why female students participated in mathematics education.

Samuelsson & Samuelsson(2016), carried out research entitled "Gender difference in boy's and girl's perception of teaching and learning mathematics". As regards the relationship to mathematics, found that boys perceive mathematics to be more important than girls do. Even if boys are more often considered to be

representatives of anti-school culture, boys also value knowledge and good grades. Boys' relationship with mathematics could be understood as if they have realized the necessity for knowing and handling mathematics to be able to work in professions such as engineer, architecture, or science – all still seen as more 'male'. They found some differences in how boys and girls perceive their classroom settings and their relationship to mathematics. Such findings could be understood as an effect of teachers' beliefs on girls as frequently more able than boys to focus and keep on-task on their own. The perception of mathematics as difficult could be strengthened by the fact that girls are not as involved as boys.

In summary different review of the literature shows that mathematics is the gate way to many areas of further study. But the participation of girls in mathematics is low. Society as a whole believed that female is mathematically less capable than male. Parents and teachers communicate this belief to the students. Society, home, and college do not provide an environment for girls to take mathematics higher education.

They are capable but they are made incapable. Although mathematics education has been given an important place in the curriculum of all levels of schools and university education. Different research shows that girls are equally capable to do math as a boy but what is the causing factor that makes girls fail in mathematics has still not found. Therefore this study will find out what is the actual situation of girls' participation in mathematics education at the university level. Also, how can motivate the girl's students in mathematics education at the university level? So, I found a gap between the review literature and the title of the study. Thus, to full fill the gap, I will like to study this topic. I believe that the topic will be suitable for research.

Theoretical Literature

The theoretical literature review help establish what theories already exist, the relationships between them, to what degree the existing theories have been investigated, and to develop a new hypothesis to be bested(Ojha, 2021). Theories are constructed by the human mind to understand our surrounding environment and can become quite complex. Theories are needed “to satisfy a very human ‘need’ to order the experienced world. The only instrument employed in the ordering process is the human mind and the ‘magic’ of human perception and thought” (Dubin, 1978, p. 7) as cited by(Turner et al., 2018).

Feminist theory. Feminist analysis asserts that girls have been socialized into gender roles in all cultures, though the extent to which behavior is innate or determined by the environment is hotly debated. Girls have traditionally played with dolls and toy cooking and cleaning tools in most cultures and eras, whereas boys prefer toy guns, toy trucks, and toy guns that require more physical activity or simulated violence. Girls may be prevented from participating in many of the same activities that boys do at the same age because they are thought to be in danger from outside sources, like men and boys or anything that could hurt them. Girls, as a group may be perceived as being more docile than boys and as being less capable of rational decision-making and more governed by emotional responses, are sometimes presented as being more responsible than boys, except for caring for younger children, which is sometimes thought to be instinctual in Girls (Moore & Bruder, 2011).

"Feminist approach comes into existence with the dissatisfaction toward sociological theories and subordination of women in various fields. The societal conception of women that they are intellectually and physically incapable in comparison to men had influenced their participation in education and employment

(Nepali, 2022). Feminist Theory is a peer-reviewed journal that provides a forum for critical analysis and constructive debate within feminism. It is genuinely interdisciplinary and reflects the diversity of feminism incorporating perspectives from across the humanistic and social sciences and the full range of feminist political and theoretical stances (Mackinnon, n.d.).

An intriguing phenomenon is reflected in this list of titles: Women at the grassroots level and women in academia began agitating for radical changes to the traditional power and authority relationships between men and women. In addition, a variety of theoretical approaches, such as liberal, Marxist/Socialist, and radical, began to emerge from the avalanche of ideas. The theory of special-interest women emerged: Black feminism, lesbian feminism, feminist map, cyberfeminism, and ecofeminism all emerged around 1990. Now that feminist theory was fully established, it was being incorporated into everyday life and academic research. Conflict is inevitable when there are so many feminist viewpoints, voices, and interest groups. The list demonstrates that feminists do not speak in a single voice; they do not always find common ground in their various agendas, and they do not agree on which issues should be prioritized (Moore & Bruder, 2011).

According to Christine Serves, liberal feminism is a specific strategy for achieving equality between men and women that emphasizes each person's ability to change discriminatory behavior against women. The expansion of feminism into theoretical and philosophical discourse to comprehend nature and gender inequality is known as feminist theory. Elizabeth candy Stratton made the first attempt to popularize it in 1848 (Yadav, 2022).

Feminism is concerned with the constructs of inter rationality, dimensions of social life, social inequality, and social transformation. Through feminist research,

lasting contributions have been made to understanding the complexities and changes in the gendered division of labor. Men and women should be politically, economically, and socially equal and this theory does not subscribe to differences or similarities between men, nor does it refer to excluding men or only furthering women's cause. The feminist theory works to support change and understanding by acknowledging and disrupting power and oppression (*Feminist Theory – Theoretical Models for Teaching and Research*, n.d.).

Mackinnon (1989), claimed that feminist theory presents a powerful analysis of politics, sexuality, and law from the perspective of women. Looking at the female and male half of the world equally trans-forms everything and toward a finalist theory of the state makes that clear with scholarship, courage, and wit.

Women's subordination and exploitation by males are best understood through a feminist perspective, according to feminists who claim that mathematics is a field that is controlled by men. It contends that because women are excluded from the field of mathematics, masculinity is still favored. Feminists contend that simply adding or including women in the field of mathematics does not fulfill the objective of comprehending women or serve to justify their exclusion. They also assert that the function that men and women play in the classroom is not explained by the biological differences between them but rather must be understood in terms of social construction(Nepali, 2022). Similar to this, feminist theory aims to speak for women's experiences, explain reality from a female perspective, pose questions about women's lives, and expose systematic biases and distortions in male-dominated fields of knowledge. They acknowledge that there are anatomical differences between boys and girls, but they argue that it is more important to focus on how girls and boys are socialized, raised, and taught appropriate behavior.

Analyzing gender inequity and advancing women's rights, interests, and issues are major objectives of feminist thought. I chose radical and social feminism for my research among the numerous feminist perspectives. Women's oppression, strategies for overcoming it, power dynamics, and the expression of the individual self are all topics covered by feminist perspectives. In the patriarchal society I employed for my study, this theory was used to investigate the position of women and social beliefs toward girls' education.

Conceptual Framework

A conceptual framework is a representation either graphically or in narrative form of the main concepts or variables and their presumed relationship with each other. This study found that girls' participation in mathematics education at the university level may dependent on difficult variables.

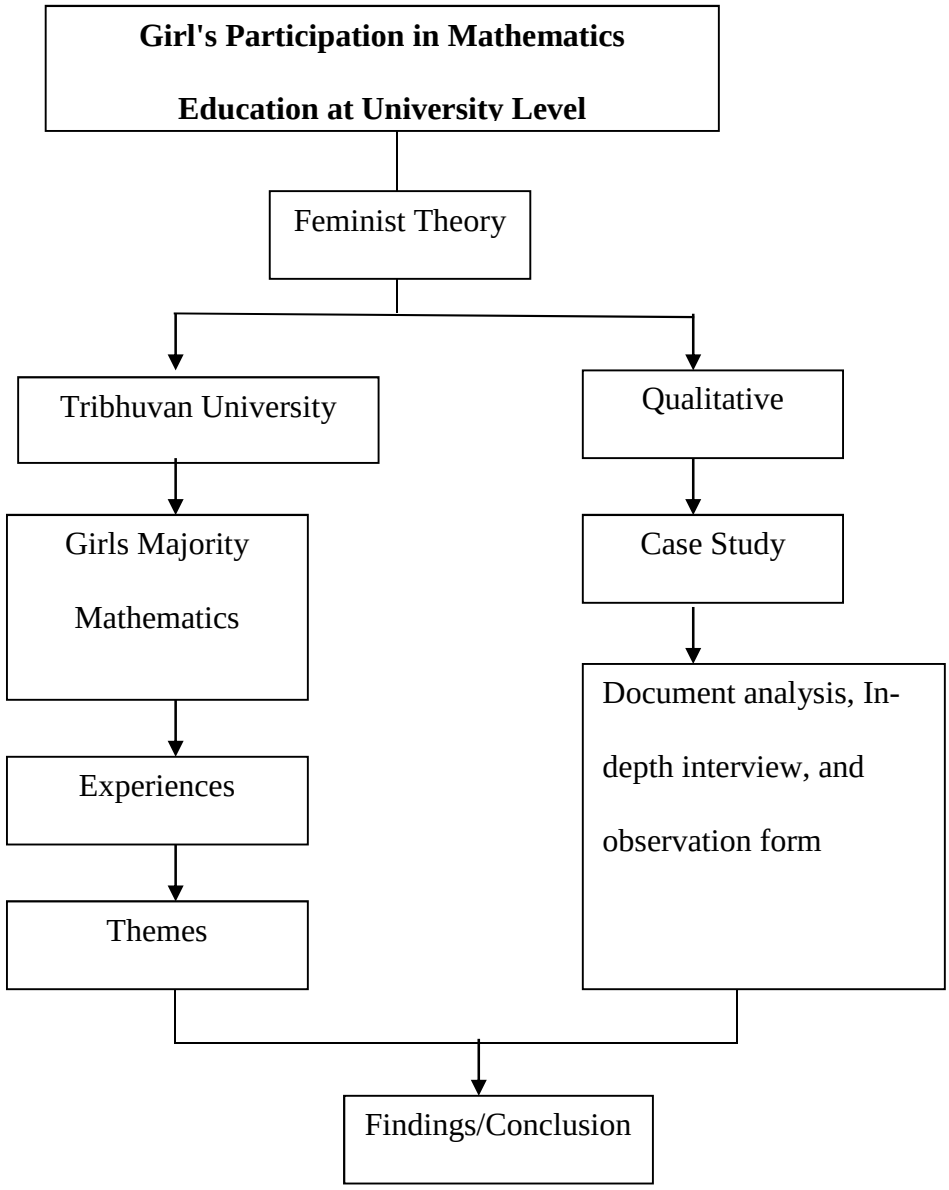

Figure 1: Conceptual Framework

Chapter III

Methods and Procedures

The method is the scientific approach that deals with the systematic procedure of collecting data and the use of appropriate research methods. This chapter presents the procedure of the study that was carried out to achieve the objective of the problem. This chapter delineates the design of the study, the population of the study, the sample of the study, the tool of the study, the data collection procedure, and the data analysis procedure used to collect the information.

Design of the Study

The research design refers to the plan that specifies the population to be studied and the method of data collection. The design of the study is a case study, descriptive and qualitative in nature. Case study research designs or approaches can be based on their function. Characteristics or disciplinary perspective (Ojha, 2021). This study was concerned with the study of girls' participation in mathematics education at the university level: A case study. To attain the purpose of this research, I used a case study as well as a qualitative research design of the study because in the case study the data was collected through direct observation in a natural setting and the actual incidence on the field.

Research Site

This is a qualitative research design so the sample size is not large. Hence the sample size of the inquiry depends upon the researcher that she/he wants to know, with the purpose of inquiry, what could be the credibility of the study and what could be done with available time and resources in the Kathmandu district. So, the total sample of my study was five girls' students, two mathematics teachers, women right

activist and political right activist are the sample of the study by purposive sampling method.

Data Collection Tools

Data collection is one of the most important parts of the study and tools are important factors for data collection. To attain the objective and get the responses to research questions the researcher gathers the data by using such tools (Ojha, 2021). There are many tools for qualitative research to get information from the participants about their experiences, ideas, and beliefs. In this study, the researcher intended to find out the girl's participation in mathematics education at the university level. For this case study, the researcher used document analysis interview schedules and observation guidelines were the main tools for data collection.

Data Collection Procedure

The data collection procedure is a technique or process to collect data to full fill the research objective. After preparing the data collection tool and declining the sample of the study, the researcher had taken permission letter from the Central Department of Education, TU, Kirtipur, and visited the selected campus Tribhuvan University Central Department of Mathematics Education Kirtipur, Kathmandu to interview students and teachers and observation guide to observing mathematics classroom of second and fourth semesters of the related university. Firstly, I established a rapport with the campus authority by introducing myself and stating the purpose and process of the research. To attain the objective of the study, I conduct an in-depth interview with teachers and students with the help of interview guidelines. The conversation of those participants was recorded by mobile phone to get the originality and neutrality of the data. Moreover, the researcher used data from secondary resources from previous research, Books, Articles, Newspapers, and so on.

Data Analysis and Interpretation

This study was qualitative as well as descriptive research, so there was no mathematical procedure to analyze the data. At first, the collected information was categorized according to the category of the respondents and their different respondents were given in the text of the interview and observation notes. After categorizing the collected data interpreted and explained the perspective of the respondent which was more helpful to fulfil the objective of the study. It was related to the students and teachers to collect the data for this research and the cross-matched information was analyzed and was descriptive in nature. The case of the students was collected from the different techniques that were the major factor.

Quality Standard

After the creation of the research instruments is finished, the quality standard must be maintained. Triangulation and checking have been used to achieve outstanding standards. I used the following criteria to highlight the suitable choices in my investigation.

Dependability. The consistency and stability of the inquiry procedure over time are the terms used in this set of quality standards criteria. When looking into dependability, researchers can use triangulation. Another purpose for auditing is to make it possible for a subsequent researcher to follow the audit trail that the previous researcher established.

Conformability. It is concerned with establishing the interpretation of the findings which are derived from the data (Richards 2007). Interpretations are also related to writing's internal coherence. As a result, I have kept my writing consistent throughout my study. In addition, conformability refers to how an investigation's findings are supported by events outside of the investigation as well as by participants

in the investigation. This is also known as the audit trail on occasion. I remained extremely vigilant to ensure that participants' perspectives were not misrepresented because I valued their perspectives. In both the collection and interpretation of the data, I did my best to be fair. I likewise focused on the morals of strengthening. My study was beneficial to my participants because there was a possibility that they learned about a social issue that they had not previously been aware of. Students have also felt empowered by this study.

Authenticity. The quality of something being true and legitimate is what we mean when we talk about authenticity. When something's value depends on where it came from or how it was made, authenticity is crucial. Member checking can be used to ask participants or other members of the community, also known as "end users," questions about apparent authenticity. These people might include practitioners who might alter their practice based on the findings.

Ethical Considerations

Qualitative research is concerned with individual cases and unique instances which may involve personal sensitive matters, which raises the question of quality, confidence, and privacy of the individuals. In the research work, numerous ethical norms and values should be considered to make standardization the data collection procedures and analyze the data in qualitative research design (Ojha, 2021). Therefore, I have thought about some ethical issues in my research, such as; I observed the classroom only to take permission from the head of the department or teacher of a related campus, I conducted the interview only after giving all the prior information to the participants about the study and getting their approval, I was not collected the data for my gain and my benefit, and also Respecting the diversity in campus, I had collected data in a biased manner.

Chapter IV

Analysis and Interpretation of Data

The main focus of the study is to identify girls' participation in mathematics education at the university level and to explore girls' difficulties in learning mathematics at the university level. This chapter deals with the analysis and interpretation of the collected information from the case study. Data analysis involves reducing and organizing the data, synthesizing, searching for a significant pattern, and discovering what is important (Khanal, 2077). The most important part of the study is to analyze the collected data because the essence of the study cannot be found without data (Ojha, 2021).

Introduction to Case University

The Central Department of Education is the richest one in terms of human resources and student enrollment .currently 184 staff members (132 teaching +52 non-teaching) apart from 30 part-time, daily wages employees, altogether 3554 students from different parts of the nation. Besides that, the student who is writing a thesis is also attached to this department.

The Central Department of Education is under the Faculty of Education, TU, and has 16 Departments, 3 of which perform semi-academic/administrative functions, whereas the remaining 13 are full-fledged academic Departments.

All departments are trying to introduce new programs in consonance with the demand of the students, their parents, the time, the nation, and of the all-encompassing globalization process. For instance, there was a Computer Science course in Mathematics Education for Master's level students. There were GIS courses at the Department of Geography. There was a run semester system in master level from the academic year we are going to start master's degree in ICTE in next

academic year. There was planned to start online courses in distance mode in English language Education and Mathematics education also Departments establish an all-equipped resource center. In this way, every Department likes to grow, has the potential to grow, and wants to distinguish itself by way of performance –research and total academics. Every Department is eager to introduce new programmers and uses modern techniques in teaching by using gadgets like multimedia projectors and computers, etc.

Mathematics education is becoming more dedicated to content and pedagogy-based stream of education. It relates the courses from new perspectives with influences from the different disciplines as diverse as psychology, philosophy, sociology, anthropology, feminism, and mathematical sciences.

With the implementation of NESP in 1971, the college of education at Tribhuvan University was restructured in 1972. Under the Institute of Education, Mathematics Instruction Committee at Kirtipur conducted different academic programs with training for in-service and pre-service mathematics teachers of different levels of schools. In 1976 two years M.Ed. program of mathematics education specialization courses of 400 marks was started. The Nepali Mathematical Science Report was published with the initiation of the Mathematics Instruction Committee. Nowadays it conducted M.Ed. Program with semester systems. In this way, the Department of Mathematics Education is established by crossing various ups and downs. And ICT Education is conducted in this department in 2071.

I am a student enrolled in 2075/76. 82 students were studying mathematics in the academic year 2075/76 which is our batch and 19 if there were girls. The table below shows the five years performance of mathematics students at the central department of mathematics education kirtipur.

Table 4. 1: ***Number of Boys and Girls Enrollment from Academic Year 2073/74 to 2077/78***

Year B.S	**Girls**	**Boys**	**Total**
2073/74	31	125	156
2074/75	17	72	89
2075/76	19	63	89
2076/77	7	26	33
2077/78(online)	1	24	25
2077/78(Physical)	7	19	26

(Sources: CDED)

According to the above table, there were 20% girls and 80% boys students in the academy year 073/74, 19% girls and 81% boys students in academy year 074/75, 23% girls and 77% boys in academy year 075/76, 21% girls and 79% boys in academy year 076/77, and 4% online & 27% physical class girl's students and 96% online &73% physical class boys students in the academy year 077/78. This shows that the involvement of girls was very low compared to boys.

Participants of the Study

The six participants of the study were Anna, Rabin, Rubee, Nemma, Mirra, and Nissa (pseudonyms). Anna (a female participant) had a mathematics teacher and 10 years of experience teaching university-level mathematics at the central department of mathematics education. The second participant, Rabin (a male participant) had a mathematics teacher and 10 years of experience teaching university-level mathematics at the central department of mathematics education. The third participant, Rubee (a female participant) had a student in the fourth semester of the central department of mathematics education M.Ed. degree. The fourth participant

was Nemma(a female participant) a student in the third semester at the central department of mathematics education. The fifth participant was Nissa(a female student) student in the fourth semester at the central department of mathematics education. The sixth participant was Mirra(a female participant) a female rights activist as well as a political right activist.

The researcher used different types of data-collecting tools in this study which are classroom observation, interview guidelines, and document analysis. Direct observation was done in the classroom. The classroom behavior of the student and teacher was carefully observed and noted. The researcher collected the data in audio form by recording the interview on a mobile phone and also noted in field notes. The primary data were first transcribed in the respondent's language and then translated into English. After the coding, categorizing, and finally, the theme was made. The result of the collected data was analyzed in the following main themes.

Girls' Participation in Mathematics Education at the University Level

In this thesis, I discuss how the first objective's data was obtained, analyzed, and interpreted. I gathered the data for this by watching the class visit the sampled collage in the classroom each day. From the classroom setting and the students' learning activities that were observed. In this topic, I looked at the mathematics classroom's regularity, group work, peer work, homework, presentation skills, and interactions with the teacher and other students. These topics were discussed in the interpretation and analysis of the information I gathered for my study. The list of them is below**.**

Classroom regularity. Students are better able to link concepts when they attend class each day. Students benefit from frequent classes, active engagement in class, and a constant flow of new information to increase their learning and further

their personal growth (Ghimire, 2019). Student achievement is impacted by classroom regularity. According to my daily class observation of mathematics classes, students are never missed their class. The attendance percentage of the sample students has presented in the following table:-

Table 4. 2: ***Attendance Percentage of the Sample Students***

S.N.	**Sample classes**	**Students**	
		Boys%	**Girls%**
1	Second Semester	83%	75%
2	Fourth Semester	95%	81%

The above table shows that girls' participation in mathematics is lower than the participation of boys in the selected campus. To know the causes of the low participation of girls I had taken interviewed mathematics teachers and their view was given below:

Anna. *If we look at the participation of female students in mathematics, it is always less than that of boys, but it can be seen that the number of girls has increased proportionally compared to before. Earlier, although the number of students enrolled was higher, the presence of girls was less, but now it is not the case. Students can be found attending regularly. The main reason for this is that in the semester system, the attendance of the students has been given an important place in the final evaluation.*

Rubin. *It is a good question if we look at the data for 5 years that you have brought, the number of girls studying mathematics seems to be less than 25%. In the same way, based on my personal experience, most of the students who have been admitted school level they are to the university level have already dropped out, and some have already chosen another discipline. Even though*

some people chose the Faculty of Education and studied other subjects than Mathematics, it seems that the overall participation in Mathematics education is less than in other subjects. If we compare it by gender, it can be found that the participation of girls is very low in math. After the implementation of the semester system, although the enrollment rate of students has decreased, the regularity seems to have increased. The main reason for this is that 80% participation in the semester program is mandatory and studies cannot be carried forward along with the job. Now, if we talk about girls, they often come to school regularly despite their problems.

According to the above experience, it was clear that the participation of girls in university-level mathematics is less than that of boys. However, after the implementation of the semester system, although the enrollment rate of students has decreased, the class attendance rate of students has increased because there is a rule that if you do not have 80% attendance in the semester, you will not be able to participate in the final exam. That's why most of the girls who are admitted come to college regularly even for attendance and I found that there are many more causes are there low participation of girls like college being far away from the rural area, mathematics being a challenging subject, early married system, teacher attitude towards girl's students, etc.

Involvement in group work. "The term "group work" describes a collaborative learning setting where students solve issues and complete evaluations collectively". The ability for students to share knowledge and resources, assign roles and duties, and receive assistance from one another. The girls' involvement in the group is shown in the following table.

Table 4. 3: ***Involvement in Group Work of the Sample Students***

S.N	Sample Classes	Girls Students	Day1	Day2	Day3
1	Second Semester	7	normal	good	normal
2	Fourth Semester	19	good	good	normal

The above table shows that the involvement of girls' students in group work was not very low. Girls equally participate in group work. Girls' involvement in group work in the fourth semester is better than in the second semester.

Anna. *In my personal experience, if the group work is given for a long time, it can be found that the girls are a little- bit disagreeable, but if the group work is given for a short time, i.e. immediate group work, the girls can be found to work easily in any group. When group work is given for a long time, it can be seen that girls struggle to contact their friends from time to time and boys are withdrawn as all the students do not live in the same place. But it does not mean that you should not participate in gro*up work.

Rubin. *If we look at the participation of girls in group work, although I can't say how much it is quantitatively, I can get the impression that girls are a little passive compared to boys. It seems that the students who come to study here come from the village area, are a bit shy, and cannot speak openly about any task. It can be experienced that they are not able to take the lead in the group and that they find it difficult to work under the leadership of others, but it does not mean that girls do not participate in the group work, but if they come to himself, I find that their participates well in the group work.*

According to the above statement is that although there is no such gender difference in group work, girls can be experienced as being a bit passive in doing group work. Because of that, girls are a bit shy, unable to take the lead of the group,

and because it is uncomfortable for the girls to mix in other groups, it was found that they are passive to group work. This does not mean that they do not participate in group work.

Involvement in peer work. "Mutual learning and development can occur through peer work. It involves drawing on common ground to develop fresh approaches to progress the case of "helper-client," but rather a balance of power and reciprocity". Positive attitudes about learning mathematics in class can be reduced by peer relationships. According to Ghimire (2019), Peer engagement aids the learner in explaining any issues and piques their interest in the subject from many angles. Students spend a lot more time with their friends and work together to create an engaging and intriguing learning environment in the classroom by interacting with both males and girls. Students must constantly connect with their peers to study mathematics in a relevant way. The girls' involvement with their peers in a mathematics class is seen in the following table.

Table 4. 4: ***Involvement in Peer Work of the Sample Students***

S.N	Sample Classes	Girls Student	Day1	Day2	Day3
1	Second Semester	7	Poor	normal	good
2	Fourth Semester	19	good	normal	good

The above table shows that the girls' involvement in peer work improved day by day. Girls are easily involved in their peer work. The involvement of girls in group work in the fourth semester was better than in the second semester.

Anna. *I have noticed a slight difference between boys and girls in peer work, but it can be said that the participation of girls in peer work has increased compared to before. In the early years, when working together, only girls were forced to form a group, but nowadays this problem has been reduced and girls*

can easily work with anyone peer.

Rabin. *Like group work, the participation of girls in peer work is also good.*

The above expression shows that there was no significant difference between boys and girls in peer work but some girls are a little bit passive in their peer work. Also, it can be said that the participation of girls in peer work has increased in the semester system the compared to yearly system.

Doing home assignments. "Home assignment is an assignment given to students to be completed outside the regular class period". It was observed during the observation period that all students completed their assignments on time. Assignments are graded according to the semester system. All of the pupils were eager to turn in their assignments on time. The group work assignment was discovered to have been completed with complete group cooperation. Boys were more enthusiastic than girls during group projects. The group's leaders had been boys.

Following a 15-day observation period, it was discovered that all female students turned in their assignments on time, but that their participation in group projects was less satisfactory than that of male students. Additionally, girls were more serious about completing their assignments than male students, and they engaged in more conversation with their friends about them.

Anna. *There is no such gender difference in the home assignment but girls are found to do such work on time. If there is such a difficult situation, they exchange their problems, otherwise, they can be found to have done their work on time. I've noticed that some of the boys have been a little sloppy and haven't turned in their home assignments on time.*

Rubin. *There is no such gender difference in a home assignment. I have experienced that if we give the home assignment, both boys and girls submit it on time.*

From the above expression, it indicates that there is no such gender difference in the home assignment but the girls are more serious to do the home assignment. Overall, except for some students, the home assignment is submitted on time.

Presentation skill. Presentation skills can be defined as a set of abilities that enable an individual to: interact with the audience; transmit messages with clarity; engage the audience in the presentation, and interpret and understand the mindsets of the listeners. These skills refine the way you put forward your messages and enhance your persuasive powers. When I observed the class and from my personal experience, I saw that the presentation skill of the female students was a little weaker than the male students. The main reason for this is that the girls are shy, afraid of presenting, and do not have enough time to prepare at home. Seemed to be. In the same way, the classmates did not pay much attention while teaching the class, and the teachers also did not pay much attention to the class teaching, and the class presentation of the female students did not seem to be so effective. By saying this, all female students are not the same, it was also found that some female students perform better than male students. What can be said from this is that if female students are given an opportunity, they can give better class presentations than male students.

Anna. A *slight difference can be found between boys and girls in class presentations. Although boys don't have much knowledge about the subject, they can give a good presentation, but only a few girls can give a good presentation. Most of the girls' presentation skills do not seem to be that good although they have improved to a great extent. In the beginning, I had to force him to perform, but now I have found that they are ready to present for their turn.*

Rubin. *Presentation is also like group work, some girls want to skip the presentation. This is the nature of most girls, but only some girls can come forward and*

speak confidently. It can be said that the main reason for this is the lack of confidence level, shy nature, and lack of deep knowledge of the product.

According to the above experience, it was clear that girls' presentation skill had a little weaker than boys' presentation skills. Although boys do not have much knowledge of the subject matter they can speak well as well as they can present well, only a few girls give a good presentation and other girls are hesitant, unable to speak forward, and unable to express their potential.

Interaction with teachers and peers in the mathematics classroom. Good interaction behavior among teachers and friends creates a good harmonious environment in the classroom (Ghimire, 2019). During the classroom observation, I found that girls' interaction between the teachers and their peer group was not very satisfying. Not only girls but boys were also not interacting with their teachers and peers. In the classes that I observed, compared to boys, it was found that girls frequently asked questions to the teachers and asked their classmates what they were not satisfied with. From my personal experience, while interacting in the class, the participation of girls seemed to be good. Although it was a little difficult to solve the problem, the help of classmates was taken to solve it. From above it was clear that the participation of girls with teachers and peers in mathematics classrooms should be not very bad.

Anna. *In my teaching experience, not only girls but also boys do not seem to interact with their teachers and peer. I don't see people discussing things that they don't understand, but I find people talking internally with peers.*

Rubin. *Compared to boys, it seems that girls are not as close to teachers or don't want to mingle. This also depends on the nature of the teacher, if the teacher is friendly, keeps a distance from the students, and listens to them, then the*

girls also prefer to interact, if the teacher is a little strict, then the students do not interact much. As far as peer work is concerned, you can find that you interact well with your peers.

What is clear from the above expressions is that in the classroom, students do not interact much with teachers and peers about things they do not understand, rather they have personal conversations with their friends. This problem is not only in girls but also in boys. Also, if the teacher is friendly to the students, the girls can express their feelings, if the teacher is strict, then the students are afraid and unable to express themselves, then what will happen in the classroom depends on the personality of the teacher.

Factors That Affecting the Participation of Girls in Learning Mathematics at the University Level

To fulfill the second objective "To explore the factors that affect the participation of girl's in learning mathematics at the university level "of the research. Here the factors limiting the girl's students' interest in mathematics are presented under the following themes:

Perception of mathematics as a challenging subject. Most of the girls' students consider mathematics to be a challenging subject. Their ability to participate in mathematics at a higher level is restricted by their perception of mathematics as difficult, time-consuming, needing more concentration, etc. (Mandal, 2021). For this, I conducted interviews with mathematics teachers to learn more about this and discovered that girls' students regard mathematics as a challenging subject that has an impact on their engagement, performance, and achievement. My respondents, who were female students and mathematics teachers, provided their opinions on the perception of mathematics as a challenging subject as follows:

Anna. *It cannot be said that mathematics is not a challenging subject, but I don't see that this problem came only after coming to the university level when the girls students studying class nine do not like to select optional mathematics in the same way girls also do not like to select mathematics as a major subject in bachelor level. Thus, when they reach the university level, only a few girls come to study mathematics. Maybe because of the nature of mathematics, when everyone calls mathematics a challenging subject, it has a psychological effect on girls and understanding that mathematics is a difficult subject, so that they study some other easier subject to improve their ability.*

Rubin. *The concept of mathematics as a challenging subject can also be taken as a psychological approach to gain the participation of girls. Mathematics is a subject that only a talented person can study. There is still an opinion that only gifted students can study this course. All the wrong arguments have their relevance. All subjects are equally important, no one subject is easy or difficult, but when anyone says that mathematics is a difficult subject at the school level, it seems to have a psychological effect on girls. This does not mean that mathematics is not a difficult subject. Since this is a technical subject, its nature is abstract and symbols are used more, so it can be confirmed that the attractiveness of girls in mathematics is less.*

Rubee. *In my opinion, mathematics is a challenging subject and requires a little more practice than other subjects, and especially girls have to shoulder various responsibilities, so they have less time to study, and teachers also do not teach experimentally while teaching, in addition to the tendency to memorize mathematical formulas, I have experienced that it has become a difficult situation. have done In the same way, I have experienced that the society still*

has not removed the idea that girls cannot read mathematics, and when I am not able to give the time accordingly, I have to hold back from studying mathematics, thinking that mathematics is really difficult.

Nimma. . *In my experience mathematics is difficult as it is a numerical subject. But for those who work hard, can devote more time to study, can read using different multimedia, and can do research, mathematics is not a difficult subject for such a student. But this exam is difficult for those who think that they will pass it after studying for 1/2 day like a language exam. It can be said that women have to shoulder the responsibilities of the household as well as their studies, and as they cannot devote so much time to their studies, so it is more challenging for women.*

Nissa. *In my opinion, mathematics is also a challenging subject. Because it takes more time to read this subject than other subjects and I forget what I have read quickly, this subject is difficult for me. Another thing is that while everyone in our society says that mathematics is a difficult subject so, some of my friends are studying other subjects instead of studying mathematics, thinking that I will not be able to study this subject.*

What is clear from the preceding statements is that mathematics is not a difficult subject, but it is not a difficult subject only for girls, and it is not a difficult subject only at the university level. Mathematics, due to its abstract nature, can still be studied only by gifted students, and the idea that not everyone can study mathematics contributes to an increase in depression. Those who are influenced by girls believe that they are incapable of studying mathematics.

Teachers' attitudes towards girls' students. "In the teaching field, male teacher behaves boys are more talented than girls so they ask question mostly boys in

the classroom. Teacher cannot understand girl related problem"(Ghimire, 2019). For all students, including girls, to be properly included, teachers' efforts and deviations from their duty to ensure that all students learn and better grasp mathematics without any gender prejudice are crucial. Girls' involvement, performance, and mathematics proficiency are negatively impacted by teachers' pessimistic attitudes toward them.

Rubee. *I have not found that the teachers made such a distinction between boys and girls while teaching, but I have experienced that they focus a little more on the students who talent in the classroom and do not care much about the students who speak less in the class. They also must finish the course on time. Solve it, only if there is a good teacher who can take everything together, the class discussion can be more effective.*

Nimma. *There is no such discrimination between boys and girls, but when teaching in the class, it seems that instead of encouraging the weak students, they focus on the talented students. Along with this, instead of using the student-centered method, the traditional teacher-centered method is used.*

Nissa. *It depends on the perspective of the teachers in the class. Not all of them, but some teachers think that girls are weaker than boys, girls can't do mathematics well, and girls don't like to study mathematics because they reject the feedback of girls from a small class.*

Based on the above statements, it is not found that the teachers in the classroom do not discriminate much in terms of looking at boys and girls, but it is understood that the teachers focus more on the students who was talented in class and do not care much about the other students. Therefore, it is clear that girls have increased frustration with mathematics.

Socio-cultural factors. Human beings are social animal, so every activity of

society affect them and in our society is a male-dominated society and society believe that mathematics is a male-dominated subject and that mathematics and science in male made subject (Nepali, 2022). It is a hard subject girl's cannot understand and study this subject. Not only that multiple factors affect the student's achievement whereas, in male-dominated societies, culture and social belief directly affect it. The students in Nepalese school classrooms are children from different social, cultural, and ethnic backgrounds. In this situation, employing the students' mother language in teaching and learning activities in mathematics classrooms has become a challenging task (Acharya et al., 2021). For this researcher has asked the question and noted them in their respective voice as below:

Anna. *In our Nepali society, the assumption is that girls are not physically and mentally strong. There is a lot of feeling that some girl will hate me because I am studying math and I can't read because I am good at math. Because not everyone can read mathematics, there is an idea in society that you need a good ability to study mathematics. Still, girls do not have the opportunity to study higher education independently. Female students who come to study at the university level may find that they come only with some permission and their self-straggle.*

Rubin. *Our society is guided by traditional beliefs. That is why the sociocultural factor is not only in mathematics, but in various parts of the state, the participation of women has not been possible. Our Nepali society has given different statuses to women and men, where men are seen as the first class. If found, second to women. Thus, due to the lack of awareness that both should be given equal rights, women are proven to be weaker than men. This directly affects mathematics education as well, and girls tend to develop an aversion to*

mathematics. Therefore, the experience of women's participation in mathematics can be lost.

Rubee. *It matters what philosophy guides our social and cultural elements. In the context of Nepal, girls are termed as physically and mentally weak. Therefore, as a woman growing up in a social environment where girls cannot study mathematics, I feel that it is a challenging task to be able to say what I can do in mathematics.*

Nimma. *Socio-cultural factors also seem to have a great impact on studying mathematics. When some people in society say that not everyone can read mathematics, it is found in some cases that the students who are interested in studying mathematics also withdraw from studying mathematics because they think that mathematics is difficult.*

Nissa. *It is said that the state of mind of a person who grows up in society is the same, that's why because of our socio-cultural environment, women have to stay at home instead of studying. In this situation, it is very challenging for women to choose mathematics for higher education.*

From above expression shows that in the social environment of a male-dominated country like ours, there is a feeling that women cannot do anything by studying, as long as the trend of seeing women as second-class people is still there. Moreover, since mathematics is an abstract subject, women cannot study this subject, instead of encouraging women, instead of encouraging them, women think that they cannot study mathematics and choose other easy subjects to continue their studies.

Self-interest in mathematics. Self-interest refers to the desire of the learner to learn mathematics. Different students have different interests. There is an issue of differential attainment between genders. Female students may have less interest in

studying mathematics beyond schools in our context. There are so many causes behind girls not liking to continue mathematics at a higher level. The parents might give less priority to their daughters, and their daughters are not getting equal opportunities as their sons (Panthi & Belbase, 2017).

Rubee. *From my personal experience, I am a person who thinks that after completing my bachelor's degree, I will not be able to do my master's degree in mathematics, so I will complete my studies by choosing another easy subject because studying mathematics requires more time to practice and I feel weak because I cannot manage my time due to various reasons. This protest has come because of the situation, but it is not that there is no desire to study mathematics. It can be seen from the schools that most of the girls have to choose optional mathematics in the 9th grade. The main reason for this is that the importance of mathematics has not been explained at the school level and since mathematics is considered an unnecessarily difficult subject girls are not interested in mathematics.*

Nimma. *Since mathematics takes more time to practice but women have to shoulder other responsibilities at home, it can be said that there is an increase in attraction towards the subject which can be passed even with a little less time and less interest in mathematics***.**

Nissa. *In my opinion, mathematics is a difficult subject, even Mathematics has been compared with other easy subjects, such as teachers teaching mathematics at the secondary level and teachers teaching Nepali have the same salary, so many girls do not want to suffer in mathematics.*

What can be said from the above statement is that even those who see their future in mathematics keep saying that mathematics is a difficult subject and women

also think that mathematics is difficult and they cannot manage the time required to study mathematics. Girls were not interested in mathematics at a higher level.

Completion of graduation in conjugal life. Early marriage can be the reason for women not choosing mathematics at a higher level. They have an extra burden to take care of the home and accomplish their responsibilities. The belief that women have the inherent capacity as careers and nurturers than taking the challenge to learn a difficult subject is another social taboo. Therefore, the issues of gender are more challenging in teaching and learning mathematics providing equal opportunity to both boys and girls in schools. There are social barriers to going to study in schools for many girls dominated (Panthi & Belbase, 2017). In my personal experience, females have poor participation and performance in a mathematics classroom in general.

Anna. *Even I could not study after marriage or I got married only after completing my studies after facing many challenges. That's why I haven't experienced that situation, but I can imagine that after getting married, not everything supports studying. For this, there is a great need for the support of the family and the husband, so the family is supportive. But if the behavior of the daughter-in-law at home is different, it will be challenging.*

Rubin. *I have taken this as the main challenge for girls. I have also taught such girl students. Those who studied school level then dropped out, studied bachelor level and then dropped out, the main reason being marriage. After getting married, when they don't get the information to increase their studies, they respond that they have no choice but to stop studying. On the one hand, daughters-in-law have to perform their duties, while on the other hand, girls are forced to study. Taking these two things in parallel, it is natural that girls lag behind boys.*

Rubee. *Of course, since mathematics is an abstract subject, on the one hand, you have to memorize many things, on the other hand, after getting married, you have to shoulder many responsibilities, and you have to listen to everyone. Before getting married, it was easy to manage the time to study, so after getting married, it is not so easy to manage the time. If the family wishes that the daughter-in-law should also study and the husband is also interested in teaching, then it will not be so uncomfortable, but after marriage, it is a bit difficult for most girls to agree on the matter of studying.*

Nimma. *It's not that there is no difference in education after marriage, but in my personal experience, if you get family support, then you don't see much difference between after and before marriage***.**

Nissa. *In my case, there is no such thing as I was not able to study after getting married. But I have met many such people who after getting married have to kill their studies without family support. Therefore, marriage has also become an obstacle for women.*

According to Caingcoy (2021), "Afghan undergraduate married female students were experiencing various challenges during their study at the university. They had to combine home and academic activities which led to stress and anxiety among the students. These challenges had a bad effect on students who could not achieve good academic grades. Also, there were statistically significant differences in the perception of the students by their class, age, and residential areas". Similarly, what can be said from the above statements is that in a social environment like ours, most women are compelled to fulfill their dream of completing their higher education only after marriage. In our society, there is still a big difference in the treatment of daughters and daughters-in-law, so most women do not get the opportunity to study

for higher education after marriage. They said that it is very difficult to manage the time required for studies as women have to shoulder many kinds of responsibilities after getting married. It can be said that women do not prefer to study mathematics because it is very difficult to study mathematics. After all, they need more time to study mathematics and they do not have that much time available.

Complete graduation after baby birth. In the context of Nepal, so many girls' students complete their master's degree after marriage as well as after baby birth. It was a very challenging thing to complete a master's to take mathematics as a major subject. Mathematics takes more time to practice but girls' student cannot maintain their time after baby birth.

Anna. *There is more time to practice studying mathematics, but after the birth of a child, girls also have to give time to their children, so that time cannot be allocated for studying. This requires self-motivation. If women are self-motivated then nothing matters. One of the things that women have to say is that if they start saying that I will find time and study, then none of them can do it, but if I say that I will make time for myself, it does not mean that it cannot be done. So strong motivation is necessary for girls' students.*

Rubin. *After the birth of the child, the most important thing is the impact on time management, which is associated with personal matters for women. The mother also has to arrange for placement in the Breastfeeding form, which is not possible even if other members of the family help in this matter. In addition to household responsibilities, women are more responsible for raising children and taking care of them, so this is affecting women's education.*

Rubee. *Being a mother of one child myself as well as a student, I have too faced this*

problem. After the birth of the child, besides being physically weak, it is very difficult to pay more attention to the care of the child than to study and also to advance the study. When the child does not allow him to read when he wants to read, he has to face the problem of not wanting to read when the child is sleeping. It seems that women have problems studying mathematics because they cannot remember it until they practice it many times and they cannot give as much time to study as they want because of their children.

Nimma. *It is not a big deal to be a little difficult after the birth of a child, but to continue studying with the child is a challenging task for women. In addition, having to stay in the room and not having someone to take care of the child at home, they have to face more problems. There is a compulsion to read only when the child is sleeping, thus the time for reading is insufficient, so it is not possible to perform well in the class it is more difference between before the baby's birth and after the baby.*

Nissa. *I don't have a child, so I haven't faced this challenge, but in the cases, I've seen, after the birth of a child, a woman has to bear a different kind of responsibility, such as from feeding the child to cleaning and taking care of it, women's time is spent. That is why it is very difficult to choose and study subjects that require more time like mathematics.*

It was clear from the preceding expression that childbearing is a significant factor influencing women's studies. Other effects can be mitigated with the help of family, but women must do the work of placing the child themselves. Just taking care of the baby after birth is a difficult task. Along with that, it becomes more difficult to advance your studies. Mathematics has become a difficult subject for women because it requires a lot of time to study, and after giving birth to a child, they also don't have

enough time to study mathematics. Girls with a strong internal force can continue their studies.

Equity and asses of university education. In the context of Nepal, one of the major problems is the question of equity and access in mathematical education. Inequity exists, and not everyone has equal access to mathematical instruction and learning. A serious and important political issue exists here. Due to the unsuitable classroom size, the sheer number of students, and the usage of traditional pedagogy, no student can receive an equal opportunity in our classroom for math teaching and learning. In the classroom, teachers might place a strong emphasis on bright children. Typically, he or she doesn't care about struggling students. While teaching and learning, some teachers show bias toward their pupils based on their racial and familial backgrounds. This does not seem to be a good lesson at all (Panthi & Belbase, 2017).

Anna. *It is not that assessment and equity in university education do not matter, but this matter does not matter only to girls, this problem is the same for everyone. There is no educational institution to study higher education in a place accessible to everyone and there is a compulsion to camp outside the house. Due to this, many people have to face this problem because they need a lot of investment and they cannot study higher education if they do not have investment*.

Rubin. *If you run a 100-meter race with a healthy person and a physically challenged person, the healthy person will win. In the same way, the people who are left behind due to social reasons should have been given an opportunity. Even if they are not given the opportunity of equality by bringing the idea of compensation due to their being left behind, it seems that women are lagging*

*in mathematics education***.**

Rubee. *This problem is not only for girls but also for boys. Not everyone can study higher education, and the main reason for this can be taken from the financial situation. Since there is no higher education institution for students from financially weak families to study and they cannot afford to study far away, some students seem to be deprived of studying higher education. In addition to that, only a few people get the idea of making girls sit outside the house and study alone.*

Nissa. *Yes, I don't see equal access to all women at the university level, why is it that there are no educational institutions in rural areas to study higher education and because their financial status does not scare them to go outside the home to study, they have to be deprived of studying higher education.*

According to the above participants' experiences, the main problem affecting girls' equity and university education is a financial problem.

Overall, it seems that the participation of women studying mathematics at Tribhuvan University is less than that of boys. After the implementation of the semester system, although the enrollment rate of students has decreased, their attendance rate has increased. After the implementation of the semester system, it was found that the ability of the girls to do group work, peer work, home assignments, and presentation skills has also increased. In the same way, factors affecting the girls to study mathematics include mathematics being a challenging subject, teachers' attitudes towards girls student, girls' desire, the compulsion to study higher education after marriage, difficulty in managing time after having a child, and lack of access to complete university level, etc.

"According to the ADB report 2015, the disparities in access to education are

related to social discrimination. Before the 1950s in Nepal, higher education was beyond the access of the general public. Higher education was limited to the elite class of people. In the distant past, Dalits (lowest in the Hindu caste system), Janajatis (indigenous ethnic groups), and women were not even permitted to pursue higher education"(Panthi & Belbase, 2017). If we look at the participation of women in higher education, even so far, the situation is not satisfactory. Although there has been some improvement compared to before, it is still not as good as it should be. In the present situation, how can women's participation in higher education be seen and how can women's participation be increased? An interview with a women's rights activist is presented below.

Mirra. *Based on my experience, the participation of students at the school level is good, but in higher education, the participation is not satisfactory. The main reason for that is the student's desire to study, but they are forced to leave school due to various reasons. If we look at the condition of Tribhuvan University, only a few students have come here to study. In that, the number of girls is still low, although the participation of girls in easy subjects is good, the participation of girls in subjects such as science, mathematics, and technology is less. Likewise, not only in the education sector, but also in various parts of the state, the participation of women is less than that of men, because, in a social environment like ours, there is a lack of encouragement for women, they cannot create a women-friendly environment, and because women have to endure violent activities from their families, women in every field Participation has not been significant. To increase the participation of women in higher education, encouraging students from the grassroots level, giving them a sense of equality, giving training to teachers, making parents*

aware of women's education as well as finding out the reasons for women's dropout and solving them, and providing scholarships and various types of scholarships for women. If we can continue the activities like organizing awards, we can be sure that the participation of women will increase as well as the quality of the training.

Napoleon once said that *"give me a good mother. I'll give you a good nation*". Women are the mother of the future generation. If women are educated the future generation is also educated therefore give opportunity them for higher education.

From the above expression, it can be concluded that most students seem to drop out when they reach the university level. There are many reasons behind it, such as family support, family economic condition, parents' education, etc. Not only in the field of education but also in various parts of the state, there is no significant participation of women, because, in a social environment like ours, women have not been able to move forward due to the trend of discouraging rather than encouraging women. Women's participation can be increased if they are encouraged, appreciate the work done by them, organize studentships, and create a women-friendly environment in every field.

The expression of feminism into theoretical philosophical discourse to comprehend nature and gender inequality is known as feminist theory. According to feminist theory, no one is smart or weak based on gender. Gender is only the biological characteristics of men and women. This indicates that there is no effect on studies. The environment is the factor that affects learning. Like the environment a person gets, he exhibits the same kind of behavior. The feeling that women can't do anything has been in our society for a long time and has given women fewer opportunities in society, so women have been left behind. The feminist theory

advocates that they are not left behind because they are women, and this feminist theory has helped women to move forward.

Based on my personal experience, when I reached class 9, I studied optional mathematics, many people said that optional mathematics is difficult to study, but I chose optional mathematics because I could study it. I did the same when I passed SLC and then when I enrolled in class 11, I studied science instead of math, and science because you can't study them, I have to choose some other easy study. That's what my parents said at my house. I also chose math as it is easier to study than science, so I chose math and pursued my studies further. When I completed my bachelor I got married even after getting married, I was able to do a master's degree only because of the support of my family. But like me, all my female friends have not been able to study because of their various problems. It is clear from the above statement that they have been influenced by many factors. From the above statement, reviewed theory and my experience are that many things affect women in studying mathematics, but if they move forward with the determination that they will do it, then they can get success.

Chapter V

Findings, Conclusion and Implication

After analysis and interpretation of the collected data, the researcher needs to present the major finding, conclusions, and implications of the study. This chapter deals with the key findings and conclusion of the study and suggests the possible direction for further research and its implications for those concerned bodies. The findings, conclusions, and implications of this study have been presented in separate headings as follows.

Finding of the Study

This case study related to girls' participation in mathematics education at the university level. The purpose of this study was to identify girls' participation in mathematics education at the university level and to explore factors that affect the participation of girls in learning mathematics at the university level. The researcher used document analysis, interview schedules, and observation tools for the collection of data. The data obtained from these tools. Based on analysis data interpretation of results and researcher won experiences. The objective wise findings have been given below.

Participation of girls in learning mathematics at the university level

- Based on class observations and participants' interviews, it was found that the participation rate of girls in mathematics studies is lower than that of boys, but the attendance rate of girls has improved significantly. Also, the girls have good discipline in the classroom. They come to college on time rather than boys.
- From the class observation and the interview of the participants, the participation of girls in group work was seen to be a little passive compared to

boys. Although the girls participated, they did not work actively.

- According to the class observation and the interview of the participants, it was seen that even though girls participated in group work as well as peer work, they were a little passive compared to boys.
- Based on the class observation and participants' interviews, it was found that although almost everyone submitted the home assignment on time, the girls still submitted it faster than the boys.
- From the class observation and the interview of the participants, it was found that the presentation skill of girls is weaker than that of boys. It was understood that the girls have good knowledge in the field but they are unable to perform well for various reasons.
- According to observations of the class and participant interactions, neither the females nor the boys in the class interact much with the teachers and other students about things they don't understand. However, if the teacher is helpful and empathizes with the students, then the students interact with the teacher. If the teacher is not helpful, then the students are terrified of the teacher's behavior and are unable to express their thoughts to the teacher, so they do not interact.

Finally, researchers conclude that girls' participation in mathematics at the university level is not comparable to that of boys, which is unsatisfactory. However, in a few areas, such as completing home assignments and interacting with peers, girls outperformed boys. In terms of attendance, group work, peer work, presenting skills, and teacher engagement, girls are less active in the classroom.

Factors that affecting the girls' participation in learning mathematics at the university level

- From the interview it can be found that mathematics is difficult subject because its abstract nature makes it difficult to remember the different terms of mathematics and at the same time, it seems that it affects the psychological effect on women so perception of mathematics as a challenging subject.
- According to the participants' interview, it is found that the teachers in the classroom do not discriminate much in terms of looking at boys and girls, but it is understood that the teachers focus more on the students who was talented in class and do not care much about the other students so girls were back in the classroom.
- From participants interview it can be shows that in the social environment of a male-dominated country like ours, there is a feeling that women cannot do anything by studying, as long as the trend of seeing women as second-class people is still there. Moreover, since mathematics is an abstract subject, women cannot study this subject, instead of encouraging women, instead of encouraging them, women think that they cannot study mathematics and choose other easy subjects to continue their studies.
- It is found that even those who see their future in mathematics keep saying that mathematics is a difficult subject and women also think that mathematics is difficult and they cannot manage the time required to study mathematics so the girls were not interested in mathematics at a higher level.
- It can found that, there is still a big difference in the treatment of

daughters and daughters-in-law, so most women do not get the opportunity to study for higher education after marriage. They said that it is very difficult to manage the time required for studies as women have to shoulder many kinds of responsibilities after getting married.

- From the participants' interview, it was clear that a key factor influencing women's studies is childbearing. Other effects can be reduced with the help of the family, but women have to do the work of placing the child themselves. Just taking care of the baby after birth is a challenging task. Along with that, it becomes more difficult to advance your studies. Mathematics has become a challenging subject for women because they need a lot of time to study mathematics and after giving birth to the child they also don't have to give enough time to study mathematics.
- From the participants interview it is found that financial problem is the main problem on girls' equity and assess university education.

Conclusion

From the above findings, it is concluded that mathematics is the gateway to many areas of future study but the participation of girls' students in learning mathematics was very low. Because society as a whole believes that females are mathematically less capable than boys. Parents and teachers communicate this belief to the students. Society, parents, and the school environment do not provide an environment for girls to take mathematics subjects at a higher level. Girls are capable of studying mathematics but they are made incapable. This reinforced the belief that they are not capable of doing well in mathematics. Therefore, girls do not like to select mathematics at the school level, so the participation of girls in mathematics education at the university level is also very low.

Mathematics education is recognized as one of the key subjects in Nepal. It is regarded as a topic of creative mind application. Mathematics education has changed from the past in terms of the environment. In the past, boys were thought to be better at learning mathematics than girls, who were thought to be less talented in this area. But at this time, both boys and girls appear engaged in learning mathematics and demonstrate active engagement. However, girls take a much smaller percentage of math classes than boys do. Although some girls exhibit an interest in learning mathematics, their engagement appears to be low for a variety of reasons, including various factors like perception of mathematics as a challenging subject, teachers' attitudes towards female students, girls' interest, socio-cultural factors, complete university-level education after marriage as well as after baby birth and girls assess in university education.

The major focus of this study was to identify girls' participation and to explore the factors that affect girls' participation in learning mathematics at the university level. Since there is a lot of research that has been carried out on girls' participation, this study was a bit different from other research, which provides valuable sources and guidelines for researchers and other practitioners to know about the participation and problems of my girls.

Finally, it is concluded that girls are equally talented and there should be equal facilities at home and school to learn mathematics. To promote girls' participation in higher level mathematics, parents and teachers should: enhance girls' confidence in math abilities, create a conducive classroom climate that enhances interest and curiosity in mathematics, expose girls to female role models who have succeeded in mathematics, give monetary reward to able girls and provide information, advice, and guidance on mathematics careers.

Recommendation for Further Study

The conclusion of the study cannot be generalized to all university-level girls' students and all areas and all girl students because it was limited only to the central department of mathematics education. Thus after analyzing the conclusion and implications of the study the researcher has made the following recommendations or suggestions for future studies to validate the present study findings.

- Almost all girls students are weak in mathematics and do not participate in mathematics education programs for girl students. This is an area where research should be focused.
- There is also a need for female teacher recruitment in colleges and universities. If female teachers are recruited, they can play as role models for girls.
- To create an interactive discussion in the classroom, the teacher should be student-friendly so that the girls can express their problems easily. Teachers must pay attention to this.
- Most of the girls hesitate to do the class presentation. What can be done to remove that habit of girls should be the attention of future researchers?
- Girls are not weak in mathematics but they are not given the opportunity. If girls get the opportunity, girls can do better than boys in mathematics, so parents and teachers must encourage girls to study mathematics.
- As it is a challenging task for a married woman to study mathematics along with all the responsibilities of the household, all the members of the household must understand and encourage her to study without stress.
- A woman finds it very uncomfortable to continue her studies after childbirth. The main reason for that is not being able to manage time. Therefore, without

disrupting the work of women and men at home, the husband will help the women as much as possible and help them to study.

Implication of the Study

From the findings and conclusion of the study the researcher suggests the following implications of the study

- It is useful for policymakers if they wanted to form any policy to increase girls' participation in learning mathematics.
- It helps to find the girl's difficulties in learning mathematics.
- It helps to encourage the girl's students to learn mathematics.
- It helps to bring a positive attitude to learning mathematics.
- Mathematics teacher should be with effective teaching.
- This study helps to minimize the failure rate in mathematics.

References

Acharya, B. R. (2074). *Foundation of mathematics education*. Kathmandu: Dikshant Prakashan.

Acharya, B. R., Kshetree, M. P., Khanal, B., Panthi, R. K., & Belbase, S. (2021). Mathematics educators' perspectives on the cultural relevance of basic level mathematics in Nepal. *Journal on Mathematics Education*, *12*(1), 17–48. https://doi.org/10.22342/JME.12.1.12955.17-48

Caingcoy, M. E. (2021). *Journal of World Englishes and Educational Practices (JWEEP) Research Capability of Teachers: Its Correlates, Determinants, and Implications for Continuing Professional Development*. *July*. https://doi.org/10.32996/jweep

Devkota, S. (2019). *Participation of Girls In Mathematics*. Tribhuvan University Central Department of Mathematics Education Kirtipur, Kathmandu.

Eccles (Parsons), J. S. (1984). Sex differences in mathematics participation. In *Advances in motivation and achievement* (Vol. 2, pp. 93–137).

Feminist Theory – Theoretical Models for Teaching and Research. (n.d.). Retrieved July 29, 2022, from https://opentext.wsu.edu/theoreticalmodelsforteaching andresearch/chapter/feminist-theory/

Ghimire, S. (2019). *Participation of girl's in mathematics at university level*. Tribhuvan University Central Department of Mathematics Education Kirtipur, Kathmandu.

Iipinge, J. (2014). *Socio-cultural factors that influence girls ' participation in mathematics in secondary schools in Oshana*. *February*.

K.C, P. (2021). *Participation of girls in learning mathematics*. Tribhuvan University Central Department of Mathematics Education Kirtipur, Kathmandu.

Khanal, P. (2077). *Research methodology in education*. Kathmandu: Sunlight Publication.

Luitel, S. (2019). *Participation of students in the mathematics classroom*. Tribhuvan University Central Department of Mathematics Education Kirtipur, Kathmandu.

Mackinnon, A. C. (n.d.). *Google Books*. 1989. Retrieved July 30, 2022, from https://books.google.com.np/books?op=lookup&id=Shn5xHywtHIC&continue=https://books.google.com.np/books%253Fhl%253Den%2526lr%253D%2526id%253DShn5xHywtHIC%2526oi%253Dfnd%2526pg%253DPR9%2526dq%253Dfeminist%252Btheory%2526ots%253DM7etZFJIh4%2526sig%253DZkxeMkMU5MUaC0nREIz3EgXtB0w%2526redir_esc%25

Mackinnon, A. C. (1989). Toward a Feminist Theory of the State - Catharine A. MacKinnon - Google Books. In *Harvard University Press*. https://books.google.com.np/books?hl=en&lr=&id=Shn5xHywtHIC&oi=fnd&pg=PR9&dq=feminist+theory&ots=M7etZFJIh4&sig=ZkxeMkMU5MUaC0nREIz3EgXtB0w&redir_esc=y#v=onepage&q=feminist theory&f=false

Mandal, R. K. (2021). *Girl's Low interest in higher level learning mathematics*. Tribhuvan University Central Department of Mathematics Education Kirtipur, Kathmandu.

Moore, N. B., & Bruder, K. (2011). *Philosophy: The power of ideas eighth edition*. Chennai: McGraw Hill Education(Indian) Private Limited

Nepali, S. (2022). *Promoting girls in learning mathematics: A case study*. Central Department of Mathematics Education Kirtipur, Kathmandu.

Ojha, L. R. (2021). *The ability of ICT tools and its Application in mathematics classroom: A case study*. Tribhuvan University Central Department of

Mathematics Education Kirtipur, Kathmandu.

Panthi, R. K., & Belbase, S. (2017). Reflections on issues of teaching and learning mathematics in the context of Nepal. *European Journal of Educational and Social Sciences*, *xx(x)*(June), 1–22.

Practices, T. I. (2020). Female Students' Participation in Mathematics Education at the University Level in Ghana. *British Journal of Education*, *8*(4), 30–45. https://doi.org/10.37745/bje/vol8.no4.p30-45.2020

Rupakheti, I. (2017). *Girl's Participation in mathematics at university level*. Tribhuvan University Central Department of Mathematics Education, Kirtipur, Kathmandu.

Samuelsson, M., & Samuelsson, J. (2016). Gender differences in boys' and girls' perception of teaching and learning mathematics. *Open Review of Educational Research*, *3*(1), 18–34. https://doi.org/10.1080/23265507.2015.1127770

Shakya, B. D. (2021). Girl Students in Mathematics at Bachelor level Colleges of Kathmandu Valley, Nepal: Some Problems and Prospects. *Voice of Teacher*, *6*(1), 19–32. https://doi.org/10.3126/vot.v6i1.44064

Turner, J. R., Baker, R., & Kellner, F. (2018). Theoretical Literature Review: Tracing the Life Cycle of a Theory and Its Verified and Falsified Statements. *Human Resource Development Review*, *17*(1), 34–61. https://doi.org/10.1177/1534484317749680

Yadav, D. K. (2022). *Participation of girl's students in mathematics education*. Tribhuvan University Central Department of Mathematics Education Kirtipur, Kathmandu.

Appendices

Appendix –A

Classroom Observation Form

Class Participation Indicators	Girls	Boys	Remarks from observation
Classroom Regularity			
Involvement in a group work			
Involve in a peer work			
Doing Home assignment			
Presentation skill			
Interaction with teachers			
Interaction with peer			

Appendix-B

Interview Guideline for Teacher

Name of teacher:-……..

Qualification:-……

Teaching experience:-……

Interview Questions for Mathematics Teachers

1. How do you find the participation of female students studying in the mathematics education department of our Tribhuvan University?
2. Has the participation of female students decreased after implementing the semester system? Which is more? Why?
3. In the semester system, class participation is also very important. Do the female students attend the class regularly or not? If not, why?
4. How many students agree to do group work? What does the participation of female students in group work look like?
5. How many female students agree to peer work? What does the participation of female students in peer work look like?
6. Can gender differences be found in homework? If so, how much?
7. How many girls students agree to do the class presentation? Is it less than boys' students? How can you get the class presentation skills of female students?
8. How much interaction do female students have with teachers and peers in the classroom? More or less than a boy?
9. Although about 51% of the total population of Nepal are women, the participation of women in mathematics education is less than that of boys. What is the main reason for this?
10. How much influence does the fact that mathematics is a challenging subject for

women to study mathematics have? Is mathematics a challenging subject? What is your opinion about this?

11. How much influence do socio-cultural factors have on female students to study mathematics?

Appendix-C

Interview Guideline for Girls Students

Name of the student:-…….

Semester:-……

Address:-…….

Age:-……....

Interview questions for Girls student

1. Is mathematics a challenging subject? How? How is this affecting the girls' students?
2. How do teachers treat female students? How much is the effect of teachers' behavior on mathematics studies?
3. What are the socio-cultural influences of learning mathematics?
4. Do girls not want to study mathematics? Why didn't you get a chance?
5. After getting married, how easy/uncomfortable is it for female students to study mathematics? Has marriage affected their studying mathematics?
6. How many female students are uncomfortable with studying mathematics after having a child? Is it not possible to study mathematics after the birth of a child?
7. Is there a lack of equality and access for women in university education? Why?

Appendix-D

Interview Guideline for Women's Right Activist

Name: - ……

Sex: - …….

Age: -……

Address:-…….

Interview questions for women's rights activist

1. What is the status of women's access to higher education in the history of the overall women's movement and at present?
2. What is the status of women in each part of the state?
3. What could be the reason for women falling behind?
4. How can the representation of women in higher education be increased?