

**MATHEMATICAL ANXIETY AMONG SECONDARY LEVEL GIRLS
STUDENTS**

**A
THESIS
BY
NIRANJANA REGMI**

**FOR THE PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE
DEGREE OF MASTER OF EDUCATION**

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Letter of Certificate

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Thesis

By

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Entitled "**Mathematical Anxiety among Secondary Level Girls Students**" has been approved in partial fulfillment of the requirements for the Degree of Master of Education.

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.....

Niranjana Regmi

ABSTRACT

The study entitled “**Mathematical Anxiety among Secondary Level Girls Students**” explores the anxiety felt by the Grade X girls students. Mixed design was adopted in this study. The total population of this study was 100 students studying in grade X from ten schools of Kathmandu valley. The sample of this study was 100 students from the selected schools. The sampling procedure of this study was random sampling. The data were collected through questionnaire and interview with both teachers and students. The collected data were analyzed and interpreted by using mean score.

The major findings of this study were among 100 sample students, the anxiety was found on 44 students. The other important finding of this study was the cause of anxiety among students had been identified. It was found that student's pre-knowledge and interest, course content, teacher's competency, school management, peer group, economic and educational condition of family and so on were responsible for anxiety in mathematics in some high or low degree.

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Chapter-I

INTRODUCTION

Background of the Study

Mathematics is an exciting and challenging subject which is continuously developing by a rapid rate across many research areas. It has a natural elegance and beauty. Taking a real world problem and creating and applying Mathematical models to aid understanding is often hugely satisfying and rewarding. Mathematics is used throughout the world as an essential tool in many fields including Natural science, Engineering, Medicine, Finance and the Social Science etc. The terms Mathematics may be considered in a number of ways. It is also related to measurement, calculations, discovery, relationship and dealing with the problems of space. So, it can be considered as an exact Science.

The term Mathematics has been explained in various ways. There are very much diversity to the definition of Mathematics and there is no such a word or sentence to define it exactly. According to Advanced Learner Dictionary, "Mathematics is the science of number and space including Arithmetic, Algebra, Geometry and Trigonometry". Mathematics is an abstract area of knowledge. It helps to an individual to develop his/her potentialities creating confidence for personality development. It gives an idea of thinking to any area of knowledge and creates his/her logical views towards it. It makes an individual multi - dynamic and multi-valuable. According to Collins Dictionary (2003 3rd Ed.) of Mathematics. "Mathematics is a group of related subjects including Algebra, Geometry quantity, shape and their interrelationship, application, generalization and abstraction". Thus, it can be said that 'queen of Science' due to the role played by Mathematics in the field of science and other disciplines like Agriculture, Industry, Business etc.

This is only the sample representation about Mathematics among the vital role its significance. Without Mathematical knowledge the whole universal knowledge is paralyzed. After realizing such a role of Mathematics all around the world, still the human beings are not ready to learn the Mathematics. A lot of reasons are related in causing the anxiety in Mathematics learning in girls students. Only a small mass of student appreciate and ready to learn about Mathematics but most of the girls students advocate opposite to it. They learn only compulsory Mathematics by feeling uneasy. Due to this fact, the number of girls students in Mathematics class is going to decrease day by day. The number of girls students in optional Mathematics class is almost negligible in number. This is matter of great concern because the number of girls student will be zero, in recent years if no one gives the method of remedial. Hence I choose this topic to find out the level of Mathematics anxiety and to find out the cause of Mathematics anxiety in girls students.

Mathematics Anxiety

Mathematics anxiety is the panic, helplessness, paralysis and mental disorganization that arises among some people when they are required to solve a Mathematical problem (Tobias and Weissbrodtag (1980). Math anxiety is a serious and pervasive problem especially in the community in many forms and degrees from "freezing up".

It can also be explained as a sense of discomfort observed while working on Mathematical problems (Hadfield and Trugillo, 1999; Ma, 2003) and is associated with fear and apprehension to specific Mathematics related situations (D'Ailly and Bergring, 1992). It is found among elementary school students (Jackson and Leffingwell, 1999; steel and Arth, 1998); high school students (Tobias, 1990; Bather et al, 1994). Mathematics anxiety is an emotional rather than intellectual problem. Math anxiety can cause one to forget and loss one's self confidence. It is very real and occurs among thousands of people. It can also be named as 'math phobia' which is gradually increasing among the large mass of pupils. In Nepalese contexts, there haven't been conducted any research in international perspective.

Jain and Colleagues (2009) described Mathematics anxiety as consequences of "an inability to handle frustration, exercise, school absence, poor self-concept, internalized negative parental and teacher attitude towards Mathematics through drill without "real understanding" (p.240). A more concise description of the causal factors its provided of by Devine and Colleagues (2012) who classified variables systematically related to the development of Mathematics anxiety into three groups, namely environmental variables, intellectual variables, includes the child's level of more general cognitive abilities, while personality variables, include comprise concept, attitude, confidence and learning behavior.

According to the Stuart (2000), the development of Mathematics anxiety often taken its origin from a lack of confidence in situation involving the necessity handles numerical information. A recent study with adolescents demonstrates that Mathematic anxiety can be modeled as a function of both a person's self-regulation skill's and self – efficacy beliefs (Jain & Dowson, 2009).

Math anxiety is limited neither to a minority of individuals nor to country. International comparisons of high school students show that some students in every country are anxious about Math. It is perhaps unsurprising that there is an inverse relationship between anxiety and efficacy.

In conclusion, anxiety in Mathematics is going ahead as a long-lasting psychological diseases. Math anxiety is real and occurs among thousands of people. Most of the female anxiety in classroom happens due to the lack of self-confidence, self-esteem, learning style, parental attitudes, high expectation of parent, negative attitude towards Mathematics, and avoidance of math teacher's attitudes, ineffective teaching methods, negative school experiences etc. Today one of the major development of society required Mathematics. Hence, Mathematics should be looked in a positive light to reduce math anxiety. Therefore, the teacher must be re-examined traditional teaching which often does not match students' learning styles and skills needed in society.

Girls Mathematics Anxiety

Girls often believe themselves to be bad at math in accordance with gender stereotyping and often experiences high level of anxiety about the math subject. The anxiety appears to be driven by social influences, gender discrimination and different health problems etc. It is explained that elementary schools may be breeding ground for the Mathematics anxiety in female students. The elementary school female teacher displayed a high level of anxiety about Math, that skittishness was transmitted to their girls students. Those girls students who spent a year with math-phobic teacher displayed lower math achievement and increase belief in stereotypes about girls Mathematics ability. Still

identifying its causes could help to eliminate it at later stages of education and prevent it from making reappearance in young girls.

Statement of the Problem

Mathematics is more useful and very essential subject of human life. But from the beginning of the school life girls students feel very difficulties and anxiety in Mathematics learning. It is the problems of all girls students, teachers and parents that children do not enjoy with Mathematic. There are many studies on achievement in different area of Mathematics. But the study about the causes of girls Mathematics anxiety has not been done yet, so my research was totally depended on to explore the anxiety levels of girls students on Mathematics. The study was aimed to answer the following questions:

- What is the level of anxiety on Mathematics of girls students at secondary level?
- Does the mean anxiety score of students differ from the type of school having different types of management?
- What are the causes of anxiety in Mathematics among girls students?

Objective of the Study

The main aim of the study was to investigate the math anxiety among secondary level girls students. The main objectives of the research are presented in the following ways:

- To identify the level of anxiety among girls students towards Mathematics.
- To find out the causes of anxiety in Mathematics learning at secondary level girls students.

Significance of the Study

This research was important for secondary level education to further develop girlsstudent's knowledge, competency and interest in the subject areas. There were many factors that hinder students' progress in the subject.

Everybody knows about the importance of Mathematics in the world and the entire development of the world will be paralyzed without considering the role of Mathematics. However, most of the students feel a great anxiety while learning Mathematics. In classroom there are different students some are slow learner, some are medium and some are rapid learner. All the students are differ from culture, religion; socio-economic status and other are lack of physical facilities, untrained teacher, unsuitable textbook etc.

The main theme of the research is to identify the real causes of mathematics anxiety in female students of secondary level. The significance of this study is presented in the following aspects.

- If the mathematics anxiety in the female students of secondary levels can be identified, it can be remediated.
- The data obtained from this research would be helpful for students, instructor, counselor, guidance, parents, teachers, curriculum designs and coordinators.
- This study would help to find out the level of anxiety in secondary level female students.
- It would be much helpful to female students to identify the contributing factors of mathematics anxiety and its effect and their study.
- Other secondary school may find this data and information useful to apply Mathematics anxiety apply strategies with their female students.

Delimitation of the Study

It was concerned with a boundary area of the study. Due to various limitations and resource constraint, it was not possible to conduct the research on the large scale. Hence, delimitation for this research was as follows:

- This study was limited on only secondary level girls students.
- This study was based on 10 school of Kathmandu Districts.
- This study was included only class ten girls students.
- This study was targeted to compulsory as well as optional mathematics girls' students.
- Some of the variable i.e. age level of students and socio-economic status of the students was ignored.

Operational Definition of Key Terms

Mathematics Anxiety: It is a feeling of tension, apprehension fear that interferes with math performance (Mark H. Ashcraft, 2002, p.1)

Mathematics Anxiety Scale: It is a Scale used to obtain the measure of math anxiety of student.

Level of Anxiety

- A high level Mathematics Anxiety refers to the students who scored at or above 73th percentile of Mathematics Anxiety scale.
- A moderate level Mathematics Anxiety refers to the students who scored at or below 27th or 73th percentile Mathematics anxiety scale.
- A low level Mathematics anxiety refers to the students who scored at or below 27th percentile of Mathematics anxiety scale.

Chapter II

REVIEW OF RELATED LITERATURES

This chapter deals about the review of related literature to the study and framework of the study. A review of related literature is the source for the further study of the research task. It helps to conduct the new research in a systematic manner by providing the general outlines of the study. The review of related literature involves the identification and analysis of documents related to the study. The previous studies cannot be ignored because they provide the foundation of the present study. Some research deals about the theoretical literature, empirical literature, theoretical framework and conceptual framework for the study.

Review of Empirical Literature

A review of related literature is a source of further study of research task. It takes the research task to be undertaken in a better perspective and is essential for guidance of research planning. Telling seriously that there were no researches about the topic "Anxiety in mathematics at secondary level girls students in the context of Nepal". There are many literatures on other field of study but few attempts have made to study of mathematics anxiety and the relationship between anxiety and achievement of mathematics. Some research entitles and their purposive findings are listed as below:

Dulal (2065) conducted a research for the topic causes of anxiety in Mathematics learning. The objective of this study was to find out the causes of anxiety in mathematics learning at secondary level students. This research was qualitative in nature. This study is based on descriptive, analytic and explorative research design.

- The research shows that the students are highly responsible to produce anxious feelings. Consequently, the anxiety in mathematics learning was maximized.
- It was found that there is large intersecting part among the information/views given by students, teachers, and observation.
- Most of the students lost the habit of doing homework increasingly.

Negligence to homework doing implies low practice, low practice implies loss of self-efficacy and loss of self-efficacy implies the maximization of anxiety in Mathematics.

The data obtained from this study were class observation and exam observation were carried out with the involvement of classroom teaching and learning situation and the exam observation program was conducted while running the exam on the schools. The data analyzing is critically in verbal way and the finding also.

There is large interesting part among the information views given by students, teachers and observation.

Karimi and Venkatesan (2009) carried out research on “Mathematics Anxiety, Mathematics Performance and Academic Hardiness in High School Student”. The objective was (a) to examine the relationship between level of Mathematics anxiety, Mathematics performance and academic hardiness among school student in Karnataka. (b) to examine the effect of gender on students level of mathematics anxiety, mathematics performance and academic hardiness. The sample of this study included 284 student of eighth grade including 144 males and 140 females, selected randomly from nine different high schools in Karnataka state. To achieve the objectives of this study Mathematics Anxiety Rating Scale-India (MARS_I), Academic Hardiness Scale (AHS) were administered. Pearson correlation analysis and two independent samples t-test were used to analyze the data. The result had revealed that mathematics anxiety had significant correlation is detected with academic hardiness. It is also found that the gender differences in mathematics anxiety are significant, whereas no significant differences are detected between boys and girls in mathematics performance and academic hardiness.

Scarpello (2005) conducted a research for the completion of his doctor of philosophy from Drexel University on entitled "*The Effect of Mathematics on the Course and Career choice of HighSchool Vocational and Technical Education Students*". He generated interesting findings. On his research report it was found that many factors influence a student's course and career choice, self-efficiency and peers. There have been explained about the interesting inversely proportional relation:

The effect of Mathematics anxiety on mathematics efficacy is such that as mathematics anxiety increases mathematics self-efficacy decrease and vice-versa.

These two constructs are interlinked and inseparable. Each directly influences the other and these two together directly influence course and career choice.

Pokhrel (2067BS) completed in master's thesis entitled “A study of the relationship and achievement among ninth grade students of Kathmandu districts” and the following findings have been drawn.

- The achievement of the students in algebra is higher than in arithmetic in higher than in geometry.
- The previous achievement of students was also highly affected by the anxiety in Mathematics.
- The achievement in geometry is most affected i.e. negative correlated with the anxiety in Mathematics.

- In the current achievement, it was found that the achievement of algebra and arithmetic is less affected by the anxiety than the achievement in Geometry.

Lamichhane (2005) did his research entitled, "*Investigating the Leading Units for Causing Higher Failure Rate in Mathematics in SLC Exam*". He had completed his research within the aim that he wanted to investigate the major causes promoting higher failure rate in SLC exam and found the following findings:

- Number of student obtains less than 30% marks in each unit are not proportionality distributed to these units i.e. Failure rate in each unit/topic of compulsory math is not proportional or each unit is equally difficult for a average level student.
- Number of student obtaining marks between 30% and 60% in each unit separately is not proportional in unit wise distribution.
- Number of student obtaining marks greater than 60% in each unit is distinctly is not proportionally distributed to these units.
- Among eight units of parent compulsory math course of secondary, most of the examiners are failed geometry, probability, arithmetic's and menstruation respectively. Failure rate is other unit is not higher in comparison to these four units.
- Even though SLC results of compulsory mathematics is poor in recent year, most of examines are doing better in algebra position in comparison to other units. So, it was linked these result in terms of the factors promoting mathematics anxiety.

Chapai (2008) conducted a research on entitled "*Wash back Effort of Examination on Teaching and Learning Mathematics at Secondary Level*". According to his study, wash back is defined as the effect of examination on teaching learning process. If a text exerts beneficial influence on teaching and learning, it is sometimes supposed to be the way in which an examination may influence in a backward direction, and considered as a negative wash back. I have tried to link the negative wash back effect with the chosen topic. I would like to suppose that the negative wash back effect plays the role to motivate Mathematics anxiety and the researcher concluded following findings:

- Exam did not encourage teachers to teach according to the course objectives.
- Exam focused on teacher centered teaching and very low use of materials.
- Exam enhanced learning for passing the exam rather than getting knowledge.
- Examination promoted guesswork.
- Examination promoted to work hard.
- Wash back is a stronger motivating force of an examination.

From the findings of the different literatures, teachers and authoritarian attitude could lead to fear some classroom climate in which student might hesitate to ask question or answer the teacher. The achievement level of educated father's children is higher than the illiterate father's children. Mathematics achievement of students has been also found strongly associated with the father and mother's occupations and their education. Good school environment is essential for increasing mathematics achievement. The motivation of their parent has good achievement than who do not get motivation from their parent. In addition, the language plays an important role in learning mathematics in some ethnic community. These literatures are very useful to investigate the anxiety of Mathematics among secondary level students.

Conceptual Framework of the Study

This section deals about the conceptual framework for the research. The conceptual framework was established based on research topic's possible areas to fulfill the objectives of theoretical framework with the help of review of empirical literature for the study of anxiety of mathematics among girls students. Since the study topic is; "Mathematical Anxiety Among Secondary Level Girls Student". Therefore, the demand of this study was supposed to be those factors, which exactly fulfill the objectives. The responses given by respondents were supposed to be fallen under the following headings:

- Family background
- School environment
- Content of Mathematics
- Teacher competency
- Teaching methods and materials
- Pre-Knowledge of the students
- Motivation & interest
- Peer groups

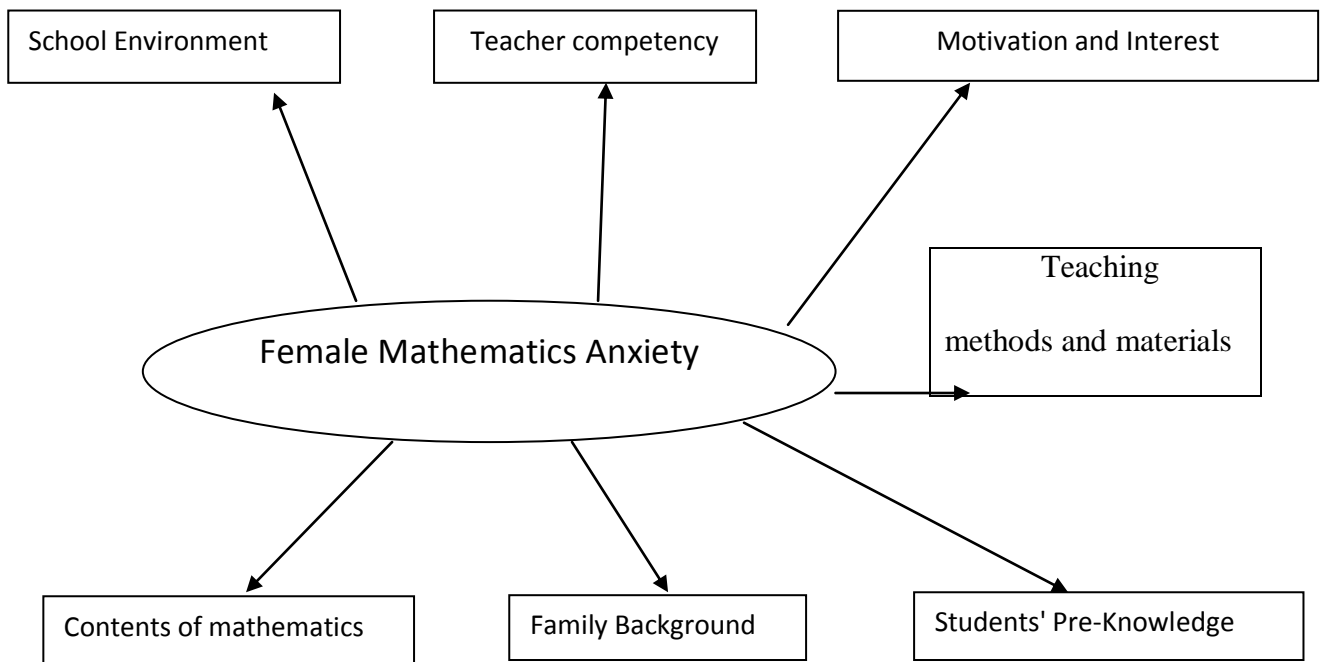


Fig: Factors responsible for girls mathematics anxiety

School Environment: The environment of School can also cause the female mathematics anxiety. The certain factors like availability of teaching materials, the attitude of mathematics teacher are responsible for mathematics anxiety.

Family Background: The family background i.e. attitude of parents towards female education, gender discrimination in education and availability of study time to girls are also major causes for female mathematics anxiety.

Teaching Methods and Materials: The application of good teaching methods and materials adapted for mathematics learning can decrease the mathematics anxiety in female students.

Contents of Mathematics: If the content of mathematics is very complex then it can cause anxiety in students.

Students' Pre-Knowledge: While learning mathematics if he or she has a lot of basic knowledge in mathematics then he or she does not feel any anxiety in learning it. However, if he or she does not have any pre-knowledge then it may be one of the major factors for mathematics anxiety.

Teacher's Competency: Student could not be motivated for effective learning if teacher are passive. Most of the teachers are not capable to teach mathematics effectively although they have the qualification and trained, so the difficulty level was increased.

Motivation and Interest: Lack of motivation to students to study mathematics, lack of teacher training to motivate students for learning play main role to promote anxiety in mathematics anxiety.

Chapter III

METHODS AND PROCEDURES

This section explains the design of the study in detail. It includes a detail description of the manner in which decision has been made about the type of data needed for the study, the tools and devices and method used in collecting data. The chapter explains design and method of the study, population, sample and sampling strategy of the study and instruments used to collect the data, the statistical procedures used in analysis and interpretation of the results.

Design of the Study

The study was designed to examine the anxiety of mathematics among secondary level students of Kathmandu district. The finding of the cause of mathematical anxiety is qualitative in nature and the finding of the level of the mathematical anxiety is quantitative in nature. Hence, mixed design was used in this research.

Population, Sample and Sampling Strategy

The research was quantitative and qualitative in nature. Five government and five private schools of Kathmandu district were selected randomly. Selected school had been also the sample of research to fulfill the objectives of the study. In the sample there were 100 girls. They were selected randomly by the help of their regular mathematics teacher.

In order to achieve the first objective and causes of anxiety in girls students a purposive sample was used to select the sample school. Among them, five girls were selected who have high level of mathematical anxiety, in which three from government school and two from private school. They were selected because of limited time and resource.

Instruments of Data Collections

In this study researcher used the relevant tools and techniques as questionnaire in depth interviewing and the study of relevant articles through journals experience by different persons who devoted their for teaching mathematics. The researcher selected following tools and techniques to collect the information.

Mathematics Anxiety Scale (MAS)

The MAS is a valid and reliable 12-items instrument of which 6 are worded positively and 6 worded negatively. It was developed by Fennema-Sherman in 1976. This 12-item scale deals with the descriptions of behavioral mathematics situations and has been used frequently with school and college students. The instruments uses a five point Likert scale ranging from one (strongly agree) to five (strongly disagree) for favorable statements and five (strongly agree) to one (Strongly disagree) for unfavorable statements related to the subject study.

Table: Likert's five point positive scale score scheme

S.N.	Meaning of Scale	Positive Statements
1.	Strongly Agree	5
2.	Agree	4
3.	Un-decided	3
4.	Disagree	2
5.	Strongly Disagree	1

If the statements are positive, they give their opinion strongly agree, then score five. In the similar manner agree, un-decided, disagree and strongly disagree have scored 4,3 and 1 respectively. For negative statements, Likert scale ranging from five (strongly disagree) to one (strongly agree) were used.

Table: Likert's five point negative scale score scheme

S.N.	Meaning of Scale	Negative Statements
1.	Strongly Agree	1
2.	Agree	2
3.	Un-decided	3
4.	Disagree	4
5.	Strongly Disagree	5

If the statements are negative, they give their opinion strongly disagree, then score is 5. In similar manner disagree, un-decided, agree and strongly agree have 4,3, 2 and 1 respectively. This scale produces interval data. To understand statements easily by the Nepali medium students, all 12-items were translated on Nepali medium also. Low score on the MAS indicate a high level of mathematics anxiety that is the reason the sign is reversed.

Interview Schedule

Interview is a two way interaction between respondent on research topic as in the form of interviewer and interviewee. Interview was taken to fulfill the second objective which was to find out the cause of anxiety in mathematics. It was taken among the subject teacher and five girls students whom have the high level of mathematical anxiety. The areas included in interview was content of mathematics, teachers competency, teaching methods

and materials, pre-knowledge of students, motivation and interest, school and family environment, peer groups.

Data Collection Procedures

To fulfill the objectives of data collection it was necessary to obtain the information for which some procedures were done. Firstly with the approval of School Administration and course teacher the researcher entered the class. The researcher explained the purpose of the study and ensured the confidentiality of the responses. After that the researcher briefed the students on how to answer in the MAS Questions. Students were required to complete MAS item in 30 minutes. Then the researcher interviewed with teacher about the factors responsible for girl mathematics anxiety. With the random selection of five girls who have high mathematical anxiety, researcher took the interview.

Data Analysis and Interpretation Procedure

After quantifying the collected data the researcher had analyze it. Firstly researcher obtained the MAS answers from the girl students. The researcher used Likert'sscale for numbering the MAS answers. From the results of the students, mean scores were used to find out the Mathematical anxiety level. The researcher categorized data obtained from interview on the basis of framework and analyzed the causes of mathematical anxiety descriptively.

Chapter IV

ANALYSIS AND INTERPRETATION OF DATA

This section deals about the analysis and interpretation of data. It is the main body of the research. This chapter just starts the proposed section for the study program. This is the working part of program. Being the main body of research, it can be seen as the practical aspect of study. Based on intending objectives and constructed tools for collecting information, researcher goes to research field for grasping current data. This section is considered as a living section in the context of data.

The data collection program was conducted through the questionnaire which was distributed among 100 students. Then interview was taken with the teachers and also with the students who have high mathematical anxiety. Collected data were analyzed and interpreted from the views of teachers and students. Data were analyzed statically in terms of mean.

Level of Anxiety Among Secondary Level Girls Student

The first objective of this study was to find out level of anxiety among secondary level girls student. To fulfill the objective "A Fennema-Sherman Anxiety Scale" was administered and mean was calculated of each student. The mathematical anxiety level of each girl student was calculated among 100 students by mean. The highest mean score was 4.75 and lowest mean score was 2.16 whereas average mean value was three. According to the calculation, 56 students had mean value above average and remaining had the mean value below average, which means among 100 girl students 44 students had higher anxiety level.

Causes of Anxiety in Mathematics

The interview program was conducted among sample teachers and students. Researcher had met them for the interview on the related research. Researcher told them about research statement discussed about the possible causes about the anxiety in mathematics. Researcher took interview according to interview guideline. We discussed about the relevancy of the research. They expressed their positive responses and became too much glad and congratulated to the researcher's aim. They were interested to express their experienced feeling in order to help the researcher and getting satisfaction. We have studied the guidelines and made the self-vision to draw actual information as far as possible. They had provided much information based on the related sectors producing anxiety in mathematics.

Course Content as Source of Anxiety

The course content of mathematics is very complex and rigid for secondary level students. This creates frustration among students which is responsible for causing anxiety in students.

View of Teacher A

The course content of Mathematics subject is very lengthy. The curriculum was managed for 180 days but need to finish in about 80 days. This was the main cause of anxiety.

View of Teacher B

The course content was very rigid and it was not managed as sequence of simple to complex. Some of the course content in mathematics couldn't be accepted behaviorally, which creates frustration towards it. For example: 5 men need to build a house within 1000 hours, but how much time will be required to build this house for 5000 men? This problem will be the problem only in mathematics but we cannot accept it behaviorally.

View of Student A

The course study was rigid and the course contents do not bring any excitement to learn it.

View of Student B

The course content is very tough and it is very difficult to solve the mathematics problem. This is the main cause of anxiety.

The negative attitude was increased due to the absence of practical curriculum. There was a negative psychological conception that mathematics is difficult in reality in students, teachers and parents. This was main obstacle to minimize self- efficacy in students. Ministry of education (MOE) announced a report about school education. MOE has managed a system that out of 365 days of a year, the curriculum was manage for 180 days but need to finish in 79 days. Time punctuality was not maintained from the side of teacher because some teacher inter into the classroom ten minute late and left before five minute (Approx). The content of mathematics donot follow the sequence of simple to complex. The course was lengthy, tough, rigid, not practical and reading level was also so difficult. Also the teachers were unable to easily deliver the course content and the key for solving methods for the mathematical problems. In mathematics there were lots of symbols and formulas which were very hard to remember exactly for the students. The students knew how to do the mathematics but they just didn't understand what the question is asking? This was main cause of anxiety.

Teachers Competency as a Source of Anxiety

The main factor for creating the suitable environment inside classroom is teacher. The level of anxiety among students can be minimized on the basis of teacher's attitude. If the teachers express negative feelings among students then it will increase the anxiety level.

View of Teacher A

Ministry of Education (MOE) announced a report about school education. MOE has managed a system that out of 365 days of a year, 220 should open the school and minimum 180 days should run the teaching/learning program. But in average, only 79 days run the school with teaching and learning activities. Time punctuality was not maintained from the side of teacher because some teacher enters into the classroom 10 minute late and left before 5 min (Approx.). The report showed that, in average, teacher were absent 10 days in a year and do not think about the coverage. The curriculum was managed for 180 days but need to finish in 79 days due to teacher's behavior. This was the main cause of anxiety.

View of Teacher B

Some teacher always express the negative feelings in front of students, consequently, the students define everything in a negative way. Some teachers do not check the homework; consequently, he/she do not know the modes of student's weakness.

View of Student A

Teachers have not devoted their attention to search the techniques to promote students' self-confidence. Some teacher bits students frequently whatever the causes, which forces the negative feelings in subject matter.

View of Student B

Teacher never solved the complete problems. He just starts and left the class. No discussions have been conducted from teacher. Teacher enters to the class with a song and students laugh then neglect the norms and values.

Student could not be motivated for effective learning if teacher are passive. Due to the absence of comprehensive teaching the main themes of problems could not be mentioned clearly. Effective teaching was failed from various sides such as student negligence to study, teacher's negligence towards effective selection of teaching methods and materials, poor management of classrooms in terms of facilities, unfavorable mathematical environment in class and that of school and so on. Most of the teachers are not capable to teach mathematics effectively although they were the qualified and trained. The solution is that the related sectors should try to increase the capacity by providing different and training programs. For this, it is necessary to add the weight- age to fulfill the learning outcomes; school should focus to teach mathematics matters should be practical as well as relevant and so on.

According to the some students, different factors are responsible for unable to understand conveniently. There is a fixed answer in mathematics. We can check the answers of problems after solving it. We can identify the steps and process of solving. Mathematics is not difficult itself. If the teacher teaches easily than the students understand easily. Most of teachers are not able to teach easily and effectively, so the difficulty level was increased.

Teaching Methods and Materials as a Source of Anxiety

The teaching methods and materials used while teaching is also an important parameter, which is directly related with the level of anxiety among students. If the teacher uses a good teaching method then most of the students will be attracted towards it which consequently decreases the anxiety level. The uses of more instructional materials while teaching create an effective learning environment.

View of Teacher A

Instructional materials were not used frequently based on the nature of mathematics and we do not have the chance to construct the materials from the side of school administration. The teacher didn't focus to the concrete concept, so it is difficult to establish the abstract concept. Consequently, students didn't understand the structure of math.

View of Teacher B

Although teacher training program provides so many techniques, tools and forces to teach through student centered approach but the applying condition couldn't be created due to the large number of students in class, lack of sufficient time for a period, minimum school opening days (only 100 days run the school out of 180 days), half holiday on Friday and most

of the programs were conducted on school organized by different sectors. Such condition created the minimum running days of school.

View of Student A

There is lack of training opportunity for teacher. Also, the trained teachers aren't conscious to apply the outcomes of training.

Most of the teachers are not well trained so that they are unable to use teaching methods and materials. Lack of instructional material on teaching/learning mathematics, lack of training, lack of mathematics lab, lack of mathematical language, its application and utility in daily life situation created the anxiety in mathematics, lack of opportunity for teacher (also the trained are not conscious to apply the outcome of the training).lack of comprehensive study of math in primary and lower secondary level. Also the teachers are unable to know the interest level of student towards mathematics teach accordingly.Traditional teaching approach is applying still in most of the school. Teachers have no habit to establish the mathematical concept before solving exercise problem, so students are unable about subject matter. There was not co-operative behavior between students and teachers. In addition, some teachers are not able to maintain the balance from the morality. The implementing system for upgrading the students should be based on the necessary system to pass the entire subject but most of the school also upgrade these students if they failed any two subjects. These conditions obviously minimize the self-efficacy and consequently promote anxiety in mathematics.

Peer Groups as Source of Anxiety

In most of the classrooms, weaker students make groups with other weaker students and talents make with talents. This situation will create a learning imbalance inside classroom since there will be less intimacy with weaker and talent students. This will increase the anxiety level among weaker students.

View of Teacher

Many students who are weak in the study are interested to sit with weak students and it is difficult to create the learning environment. They copy the guide and talent's note copy for doing homework but do not devote time for thinking seriously.

View of Student

Most of the weak students make a group and choose unsuitable place to sit in classroom. The talent students and weak students have a different group, which will create learning imbalance in the classroom. In this situation, the weaker student became further weaker in the subject matter. This is also a major cause for mathematics anxiety among students.

Many students who are weak in study were interested to sit with weak students and it is difficult to create the learning environment. They copy the guides and talented students note for homework but don't devote time for thinking seriously. Ultimately, they hate the study and they don't know the application and utility within and outside national and international perspectives. Teamwork spirit among the school family should be balanced

nicely. When the peer groups is not intelligent and have no interest on mathematics it directly effects on other. The permanent but negative psychological conception and negative explanation about math from teachers and peer group that the mathematic is a very tough subject, also effected the student to produce anxiety. School administration need to work on creating a good environment between weak and intelligent students as well as on creating a good conception about it.

Motivation and Interest as a Source of Anxiety

The motivation and self-interest of students increase the encouragement among students to learn something. Lack of motivation and interest will definitely decrease the learning tendency of students. Decreasing the learning tendency is one of the measures of incensement of anxiety level.

View of Teacher

Lack of motivations to students to study mathematics, Lack of teacher training to motivate students for learning, lack of productive activities performed by school administration to motivate students to study mathematics, Lack of activities performed by community and school management committee to promote the curiosity of teachers and students played main role to promote anxiety in mathematics learning.

View of Students

As I was never interested in math, I never focused on mathematics classes and wasn't able to perform the conceptual basis. So it's always been harder for me and I was also just exam oriented student. This subject, curriculum, teachers and their teaching methods never influence me to work hard.

Most of the teachers do not know about the technique of motivations because of which teaching method could not be effective. Therefore students are not interested to study mathematics. Therefore, there seems the need of motivation skills, closeness of students and teachers, use of teaching materials and ICT.

Lack of motivation and students own self-responsible to study are responsible to make student weak in mathematics. Teachers had not tried to increase the courage of students to study mathematics. It effectively decreased the mathematical concepts among students. Hence, students have not sufficient motivation to study mathematics so they have lost their self-efficacy and consequently the anxiety in mathematics was maximized.

Family Environment

Family environment plays an important role on effective learning of students. Poor economic conditions will not let them to buy sufficient education materials, which directly affect the learning environment. If the parents are uneducated, then they cannot provide the supportive role for learning among students. These factors directly responsible for increasing mathematics anxiety.

Teacher's View

As most of the parents are uneducated they can't measure the ability of their kids and can't coach them. They are extremely weak in math. They have sent their children to study math for tuition and coaching. This shows the supportive behavior but not the creative role.

Student's View

I have no time to practice at home because of unfavorable situations, poor economic conditions and irregularity in school made me weak. I could not concentrate my mind in classroom. Lack of money to buy materials, books, etc. also destroyed the creative environment. I did not understand the importance of math.

The home is first school for children. In addition, the environment of home plays vital role on student's achievement. Parents are considered as first teacher for a child. The factors related like parent's support, time to doing math problems and how they are encouraged by their parent's. The environment plays the vital role in learning mathematics.

Due to the poor economic situation, they need to help their parents to make money, which does not allow sufficient time to study at home. Which causes most of student did not do homework, practicing of mathematics. Lack of family motivation to study is responsible to make weak in math. Most of the families are in below the poverty line. Student did not get chance to study at home. No practice, no study hard, absence of knowledge about the relevancy and application, unable to understand the structure of mathematical content made so weak in math (according to student). Consequently, the anxiety in mathematics was maximized. Most of the student lost the habit of doing homework increasingly. Negligence to doing homework leads low practice, low practice leads loss of self-efficacy and loss of self-efficacy leads the maximization of anxiety in mathematics.

Researcher found that actually no one encouraged student to study math. During the time of exam, they read mathematics just to pass. Students did homework themselves and took help from elders too. Many students said examination is courageous to study mathematics at home. Researcher also found students spent in less in studying mathematics than other subject. One of the students (Manisha BC) said, "I read mathematics using my minds as I can". Answering the researcher to the opinionnaire some students did homework with the help of references. Students spent studying mathematics at their home in comparison to other subject however; it depends on the level of questions i.e. easy or hard.

Some students understood quickly and some were slowly so the teacher should have been able to teach the child psychologically and should have emphasized to use materials. If the teacher neglects these aspects, the outcomes will be the unproductive.

Mathematics is a practical discipline. If someone relates it with real life situation, then the knowledge will be comprehensively understood. We could not find the laboratory in the public school as well as private. We found so many theoretical problems rather than practical. Absence of mathematics laboratory plays the responsible role to promote difficulty in mathematics.

Lack of effective instructional materials and appropriate teaching methods corresponding to the mathematical subject matter are also responsible to create the anxiety in mathematics.

Most of students complained their school never conducts mathematical or workshop which may help them to understand mathematics well.

Researcher asked them whether they can understand mathematics and get involved to do mathematical problems interesting if their school conducted any work-shop and any exhibition. They replied credibly and said “of course!”

One of the students answering the question how often do you intend to practice, mathematics at your school said, “I like to practice but I don’t know well when I ask to my friends who are intelligent they don’t learn me well!”

Chapter V

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

Summary

The title of the study was *Mathematical Anxiety among Secondary Level Girls Student*. The main objectives were found out the causes of anxiety in Secondary level girls student and find out the level of Anxiety. Mathematics plays very important role in daily life to many research and it also important in further education from secondary to university education. But it is more challenging for some students due to lack of teacher competency, motivation and interest, teaching methods and materials, student's pre-knowledge, tough content, school and family environment.

To fulfill the first objective of this study, researcher took questionnaires with students. For the second objective, researcher took the interview with teacher and students those who have high anxiety level. From these processes researcher found that content of mathematics, teaching methods and materials, teacher competency, student's pre-knowledge, motivation and interest, school and family environment lies in decreasing order which are highly responsible for the causes of producing mathematical anxiety. Finally, the researcher analyzed the collected data by mean.

Findings

On the basis of analysis and interpretation, the researcher came up with the following findings.

- 44 percentages of the students of sampled schools have anxiety.
- Most of the student loss the habit of doing homework increasable. Negligence to homework implies low practice, low practice implies loss of efficacy and loss of efficacy implies to maximization of anxiety in mathematics.
- Absence of mathematical programs conducted by school played the positive role to produce the anxious feeling among the students.
- It was found polarization of students played the negative role for the conceptual understanding.
- It was found that there is no creative visualization about mathematical subject matter.

- Lack of expert-teacher results poor teaching and learning activities which were found on sample school too. Teacher were unable to establish the conceptual understanding
- It was found that the teacher's negligence to check homework lead to decrease in self-efficacy and increase in anxiety in female students.
- From the 100 students we found 44 students have lower score than mean score and 56 students have higher score than mean score. Finally, in 100 students 44 students have anxiety.

Conclusion

Since the study is the study of anxiety in mathematics, found in secondary level girl students so it was hoped that it is very useful to maximize the mathematical understanding. Being the large importance of mathematics all over the world, a student doesn't like it through the heart. There were so many causes, which were found after the research that are responsible to maximize the anxiety in mathematics. It was found that student's pre-knowledge and interest, course content, teacher's competency, school management, peer group, economic and educational condition of family and so on are responsible for anxiety in mathematics in some high or low degree.

Recommendation and Implication of this Study

This study was based on the main theme to search the causes of anxiety and level of anxiety in mathematics learning. Based on study's findings some recommendations have provided to reduce the anxiety in mathematics learning. Some recommendations are as follows:

- Students should be self-motivated to learn and teacher should provide some techniques to establish the mathematical concept nicely and creatively.
- Teacher should focus to study the structure of mathematics. School administration should be able to maintain the balance form in students' discipline, teamwork spirit among staff to conduct teaching learning program effectively.
- Be sure that the standard of school is maintained. For this: Shifting the school to community, availability of wireless internet in each school and improvement on evaluation system are the important conditions to promote the standard of school.
- The government should help to establish in every secondary school a mathematics learning center where, students could consult for homework assignments, examination or test preparation or exploration of mathematical concepts. The center should have different mathematics books from basic to advanced on arithmetic, algebra, trigonometry and assorted tools for learning mathematics.
- Conduct the following activities based on classroom management: General rules and regulations, maintaining the impressive personality from teacher, starting the teaching/learning activities in a peaceful environment, careful that the students follow the rules or not, give task to students to decide the criteria of punishment, searching the idea to maintain the rules, be sincere, provide

reward for good habit, follow give and take operation, be careful while selecting the students for reward, motivate toward the creative language and so on.

REFERENCE

- Adhikari, R.S. (2010). *Effect of Mathematics Anxiety in secondary level students related to Achievement, Gender and Age in Kavre district*. Unpublished Master Thesis. Central Department of Education, T.U, Kathmandu.
- Chapai, K.P. (2008). *Wash back Effect of Examination on Teaching and Learning Mathematics at Secondary Level*.
- Cooke and Hurst (2005). *Mathematics competency and situational mathematics anxiety*. Englewood, CO: Libraries Unlimited, 4(3), 40-45.
- Devin & Colleagues (2012). *Gender Different in Mathematical Anxiety*, New York: Biomed Central.pvt. ltd.
- Dulal, R.P (2009). *Causes of anxiety in mathematics learning at secondary level students*. Unpublished thesis, University campus kirtipur.
- Fennema and Sharman (1976), *Fennema-sherman math attitude scales* Hillsdale, NJ: Erlbaum.
- Hhttp:\\www.historyofmathematics anxiety.com
- Hhttp:\\www.mathematicsanxiety.com
- Hopkins, G. (2002). *Class Management and Teacher Tested Tips*: [http:// www. Education World .com/a_curr/ curr 261.shtml](http://www.EducationWorld.com/a_curr/curr_261.shtml).
- K.C. Pramila (2011). *Mathematics anxiety among secondary school students and its relationship in mathematical achievement at Kavre district*.
- Karimi and Venkatesan (2009). *A study on Mathematics Anxiety*.
- Kshetri D.B.(2011). *History of Mathematics*. Pragma Publication Kirtipur, Kathmandu
- Mark H. Ashcraft (2002). *Math anxiety as "a feeling of tension, apprehension fear that interferes with math performance (p.1)*
- Niure D.P.(2015). *Research methodology*. Sunlight Publication Kirtipur, Kathmandu.
- Pandit, R.P. (2011). *Trends in Mathematics Education*. Kathmandu.
- Richardson and Suinn (1972). *Mathematics anxiety in terms of its effect on mathematical performance (p.551)*.
- Scarpello, G.V. (2005). *The effect of mathematics anxiety on the course and career choice of high school vocational and technical educations students*. A published ph.d thesis on Drexal University.

Sherman, B.F & WITHER, D.P. (2003). *Mathematics anxiety and Mathematics Achievement*. University of Adelaide, mathematics education research journal.

Tobias and Weissbord (1980). *Mathematical Anxiety in Secondary Level*.

Upadhyaya, H.P. (2067). *New Trend in Mathematics Education*. Kathmandu: Balbalika Education Publication Pvt. Ltd.

Vygotsky, L.S.(1978). *Mind in society: The development of higher psychological processes*. Cambridge University press.

Appendix A

NAME OF SAMPLE SCHOOL

- Padmodaya Higher Secondary school, Putalisadak
- Nobel Academy, Baneshwor
- RatnaRajya School, mid-Baneshwor
- New Baneshwor school, Baneshwor
- Darbar Higher School , Votahity
- Liverpool Secondary School, Baneshwor
- ArnikoBording School, Thamel
- Zenith English School,Balkumari
- SantiBalBidhyaGriha, Lainchaur
- Panga Secondary Boarding School, Shahidpath

Appendix B

SN of Students	Average Mean Score	Mean Score
1.	3	3.33
2	3	2.75
3	3	2.83
4	3	3.75
5	3	3.58
6	3	2.16
7	3	4.75
8	3	4
9	3	3.91
10	3	4.08
11	3	2.83
12	3	4.5
13	3	2.5
14	3	4.16
15	3	3.75
16	3	3.16
17	3	4.5
18	3	2.16
19	3	2.33
20	3	2.91
21	3	3.5
22	3	2.5
23	3	2.91
24	3	3.16
25	3	3.33

26	3	3.41
27	3	2.41
28	3	2.91
29	3	2.66
30	3	4.16
31	3	2.75
32	3	2.91
3	3	3.16
34	3	3
35	3	2.83
36	3	2.41
37	3	2.25
38	3	2.66
39	3	2.83
40	3	3.16
41	3	3
42	3	2.66
43	3	2.75
44	3	4.58
45	3	3.16
46	3	4.75
47	3	2.91
48	3	3.5
49	3	3.33
50	3	2.41
51	3	3.58
52	3	3.25
53	3	2.16
54	3	3.33
55	3	3.08
56	3	3.75

57	3	3.5
58	3	2.16
59	3	2.5
60	3	2.58
61	3	2.5
62	3	3.25
33	3	4.75
64	3	3.08
65	3	2.5
66	3	2.91
67	3	3.41
68	3	3
69	3	2.16
70	3	2.5
71	3	3.58
72	3	4
73	3	2.58
74	3	2.91
75	3	3.16
76	3	4.75
77	3	3.41
78	3	3.58
79	3	2.58
80	3	2.5
81	3	2.33
82	3	2.50
83	3	3.08
84	3	3
85	3	2.66
86	3	3.5
87	3	3.58

88	3	3.08
89	3	3.41
90	3	2.16
91	3	3.66
92	3	4.58
93	3	4.25
94	3	2.75
95	3	4.5
96	3	3
97	3	4.41
98	3	3.58
99	3	2.91
100	3	2.75

Appendix C

MAS QUESTIONNAIRE FOR STUDENT

Name of school:-

Student's name:-

Class:-

Roll. No.

Item No	Statement	SA	A	NU	D	SD
1.	I like mathematics, because it is essential for daily life problems.					
2.	The content of mathematics provides you the basic concepts for your higher study in related field.					
3.	Mathematics is dull and boring subject.					
4.	Study of mathematics is important because mastery over this subject earns a distinct status in the eyes of different group in the society.					
5.	The content of mathematics follows the sequence of simples to complex.					
6.	I always feel terrible strain in mathematics class.					
7.	Mathematics is meaningless and absurd.					
8.	My mind goes blank when solving on novel problems in mathematics.					
9.	Mathematics knowledge makes easier to learn other subject.					
10.	The course of mathematics should be as the need and interest of student.					
11.	Mathematics is enjoyable and stimulating to me.					
12.	I always feel tough to solve mathematics problem.					

AppendixD

INTRERVIW GUIDELINES FOR STUDENTS

Related to Teacher

- Behavior of teacher in classroom
- Relation with teacher
- Teaching style
- Effort of teacher to teach

Related to Student

- Attendance in classroom
- Participation in mathematical program in class room
- Like and unlike subject
- Relation with teacher
- Peer group relation
- Future plan
- Views towards mathematics

Related to School Environment

- Physical facility
- Library condition
- Latrine situation

Instructional Materials

- Related to teaching process and materials
- Teaching methods frequently used by teacher
- Materials(using condition) and so on
- Related to family background

Family's Educational Status

- Families economic conditions
- Role of parents
- Home environment

Related to Pre-knowledge

- Concept about Mathematics
- Practice on Mathematics
- Co-ordination with teacher and friends

Related to Motivation and Interest

- Motivation from parents
- Motivation from teachers
- Concept about Mathematics
- Future plan
- Teamwork

Appendix E

INTERVIEW GUIDELINES FOR TEACHER

Name:

Date:

Qualification:

Address:

Related to Teacher

- Relation with student and parents
- What do you think about student's career?
- Teacher training programs
- What play the key role to promote anxiety in mathematics

Related with Teaching method and Materials

- Teaching method available in school
- Teacher methods frequently used by teacher
- Teaching materials using condition by teacher

Related to Content

- Concept formation of subject matter in students about mathematics
- Concept of mathematics
- Scope/sequence/criteria's
- Structure of mathematics (is it plays the role to promote anxiety)

Related to Student

- Position of student in classroom
- Interest of student's toward mathematics and response towards it.
- Participation on solving programs
- Relation with peer and teacher

Related to Parent and Home

- Role of parent to their children
- Parent's attendance in school
- Parent status (education/economical/family size)
- Home environment

Related to Pre-knowledge

- Effectiveness of teaching methods and materials
- Concept about Mathematics
- Participation of students

Related to Motivation and Interest

- Role of teacher and parents
- Planning of students
- Use of Mathematical lab
- Curriculum