

Chapter-I

INTRODUCTION

Background of the Study

Education is the broadest means to transfer the idea, skills, attitude, experiences and knowledge of a people to another people of the community of universe. Improving life standard is the main function of education. Then, it can be said that education is necessity of human life. In education there are many disciplines among them, Mathematics has vital role. Plato advocated about the inclusions of Mathematics in the curriculum.

The term 'Mathematics' has been interpreted and explained in various ways. It is the numerical and calculation part of day to day life. It explains that the science is the bi-product of our empirical knowledge. Historically, the term has been originated from an ancient Greek word "Manthancial" this meant "to learn". It seems to be indicated that mathematics was considered as process of learning. It is also defined as the science of abstract form and as a discipline in outgrow of different human civilization. According to John Lock, "Mathematics is a way to settle in the mind of habit of reasoning.

Attitude is a hypothetical construction that represents an individual's like or dislike for an item. Attitude may be positive, negative or neutral views of an "attitude object". Most often the term attitude is used to describe an emotional reaction, either favorable or unfavorable towards some objects or conceptual in nature. An individual who has associated with positive effect or feeling with some psychological object is said to be like that object. I.e. he/she has favorable attitude towards that object. An

individual who has associated with negative effect or feeling with some psychological object is said to be dislike that object. i.e. he/she has unfavorable attitude towards that object. Thus attitude can be reduced to having a continuous from highly positive attitude to highly negative attitude, with various shade of positive and negative attitude in between including a neutral zone. Which indicate neither favorable nor unfavorable attitude.

Student's attitude towards mathematics seems to be shaped by how students define mathematics and what they considered the role of mathematics in their life. For instance a student considering mathematics as lunch of symbols and procedures tends to treat his/her mathematics concepts as a set of memorization facts. These students will not put any effort to understand "Why is mathematics". If a student does not think mathematics is important then the student will not consider worthy his/her math course. Then it will be difficult to learn mathematics meaningfully and have deep understanding of it.

Meaning of Attitude

Attitude plays an important role in determining individual reaction to particular entity. Attitude shape the behavior, positive attitude leads towards favorable response and negative attitude develops unfavorable response. Attitudes are also attached to mental categories. Mental orientations towards concept are generally referred to as values. Furthermore, an attitude is a point of view about situations. I is made what we think, what we do, and what we feel. An attitude is the degree of positive or negative effect associated with some psychological which we may be symbol, phase, and slogan person.

Attitude is usually classified in three different categories which are affect, cognition and behavioral intention. These three determinants confine the clear meaning of attitude. Attitude is one of the most pivotal determinants of achievement in academic career (Ma and Kishore, 1997). Attitude is all about someone liking or disliking of particular object. Studies show, as compared to male, females have less positive attitude for mathematics. This negative attitude tends to increase, as student move towards higher education (Hannula, 2002).

Attitude towards Mathematics

Based on a simple definition, attitude towards Mathematics is a positive or negative feeling towards Mathematics (McLeod, 1994). Based on a multidimensional definition, attitude towards Mathematics is “an aggregated measure of a liking or disliking of Mathematics, a tendency to engage in or avoid mathematical activities, a belief that one is good or bad at Mathematics and a belief that Mathematics is useful or useless” (Ma & Kishor, 1997, 27). Students’ interest in mathematics, their beliefs in the utility of the mathematical knowledge in their future career or in their everyday life determine the attitude of student's towards mathematics. Many pupils start their school years with a positive attitude towards Mathematics, but this become less positive during school years (Ma & Kishor, 1997).

Statement of the Problem

In general failures and repeaters in particular subject have been serious problem at all level of education in Nepal. More over if these failures in mathematics or language remain the same, the problem become more serious in mathematics. So to reduce these kinds of problem it is necessary to know the attitude of students toward mathematics. Mathematics can be taught meaningfully only if student have positive

attitude to learn the mathematics. There are so many factors which makes positive and negative attitude of students toward mathematics. But as I know still there is no national study about Attitude of Basic Level Student toward Mathematics. More over until now I cannot find any recent study which compares the attitude of girl and boys student toward mathematics at basic level of Nepal. Though some reports about attitude towards mathematics states that, there is positive attitude towards mathematics. Some students state about the attitude of boys and girls, more girls dislike mathematics.

No one study about the 'Attitude of Basic Level student toward Mathematics'. So the study was mainly concerned with the attitude of basic level student to intend the answer of following questions.

- What is the attitude of student toward mathematics at basic level?
- What is the different between girls and boys student attitude toward mathematics?

Objectives of the Study

To find the attitude of basic level students' toward mathematics in Dhading district following are the objectives of the study

- To identify the basic level student attitude toward mathematics in Dhading district.
- To compare the attitude of girls and boys towards mathematics at basic level.

Research Hypothesis

- There is positive attitude of students toward mathematics at basic level.

- There is significant difference in the attitude of boys and girls student in learning mathematics at basic level.

Significance of the Study

Attitude about mathematics are important for all students. Teachers need to understand how these attitudes relate to gender. In this study researcher wanted to study about the basic level students attitude towards mathematics. Moreover, this study wants to investigate the significant difference between the attitude of boys and girl student towards mathematics at basic level. More preciously, this study helps to the teacher to apply appropriate instructional strategies for mathematics teaching. This study also helps to the curriculum designer while designing the mathematics curriculum and other stakeholders related to the education.

Delimitation of the Study

Due to the certain time expenses and other related factors, it is difficult to overcome all the fields and on other hand each study is not perfect and free from limitations thus this study also has some limitation that are pointed as follow:

- This study was limited only in Dhading district.
- This study was included five public and three private school.
- The population of the study was limited in student of class eight of academic year 2072.
- Only the questionnaire was used as a tool to collect data from student.

Definition of Terms

Attitude: An attitude is a complex affair which can not be described by any single numerical index. The concept of attitude is used to denote person's inclination,

feelings, ideas and fear about mathematics. In this study the totality of the followings variables will consider as attitude: students' confidence in learning mathematics, usefulness of mathematics and perception of students' toward their mathematics teacher.

Public School: A school that get regular grant from the government of Nepal.

Private School: A school that doesn't get regular grant from the government of Nepal and supported by parents and trustees.

Confidence Scale: A subscale in modified F-S attitude scales that measures student's confidence in learning mathematics.

Usefulness Scale: A subscale in modified F-S attitude scales that measures student's attitude toward usefulness of mathematics.

Teacher Perception Scale: A subscale in modified F-S attitude scales that measures student's perception toward their mathematics teacher.

Male domain scale: A subscale in a modified F-S attitude scale that measure the students' attitude toward mathematics as its stereotype male domain subject.

F-S= Fennema-Sherman

Basic Level: School grade one to grade eight

Chapter-II

REVIEW OF RELATED LITERATURE

There are many factors that contribute to a person's attitude towards mathematics. These factors can help of hinder a student's progress in mathematics. Some of these factors are, gender, perception of students of toward their mathematics teacher, confidence in learning mathematic, stereotype of math as a male domain, and perceived usefulness of mathematic. When these factors are combined, the total effect may be greater than the sum of the parts.

Nihure (2007) completed a research on the topic "To find out the attitude of primary school teacher towards homework in teaching mathematics" with objectives to find out the attitude of primary level teachers towards homework, to test objectives hypothesis were formulated. The study conducted was of survey type.

the population of this study consisted of all the primary level mathematics teachers of Chitwan district during the session of 2063 B.S. the teacher sample for the study 45 teachers were selected 23 teachers were slected from areas and 22 teachers were selected areas of the primary level teachers.

In his study the set was developed as the tools for collecting data. This attitude scale based on taxonomy of affected educational objectives (Bell 1970) which includes statements related to the classroom homework. The questionnaires consisted of the five levels of statements classified into receiving, responding, valuing, organization and characterization. the questionnaires developed was administered on the sample of 45 teachers according to the instruction given for each part. The opinionative took about an hour to respond and data were collected on the spot. Scores 5,4,4,2 and I were allotted to the scale of favor of strongly agree, neutral,

disagree and strongly disagree respectively for the opinion of respondents on each statement. The following statically techniques were applied to verify the hypothesis of the study.

The χ^2 -test was used to determine the attitude of teachers towards homework in teaching mathematics. T-test was used test the significant difference between mean attitude scores of rural and urban teachers towards homework. All tests were tested at 0.05 level of significance. The statistical analysis of the collected data yielded the teachers teaching mathematics at primary level had positive attitude towards homework in teaching mathematics.

Pandit (1999), in this study "A study of attitude of secondary level students toward geometry" which he made in nine public and four private schools on ninth grade students of Tanahu district secondary school, concluded that the mathematics teacher of secondary school had negative attitude toward geometry but the students studying in secondary level had positive attitude toward geometry and also concluded that there was a gender difference in attitude toward geometry.

CERID (2001), in the report "Instructional Improvement in primary School" has mentioned that the quality of education that a student receives depends not only upon the relevance and appropriateness of curriculum, textbook and school activities. It also affected by attitude and behavior of his/her parents' toward education, parents' positive attitude towards various aspects of education and their capacity to provide necessary facilities for children education are two factors in ensuring quality education and another is parents' support at home.

Olufemi and James (2014) in this study "Gender Comparison of Attitude of Senior Secondary school Students Toward Mathematics in Ekiti State, Nigeria" This

study investigated the comparison of male and female students toward mathematics. This study employed descriptive research design of the survey type. The population for the study consisted of all secondary school of Ekiti State, Nigeria. The sample for the study was [600] senior secondary school students consisting of 300 male and 300 female selected from 12 senior secondary schools using multi stage, stratified and purposive random sampling technique. The mathematic attitude scale constructed and validated by the researcher. The researcher was adopted and used an instrument for gathering data. The study shows that the attitude of students towards mathematics did not depend upon sex.

Saini (2013), in this study “Attitude of higher secondary level students towards mathematics” which he made four higher secondary school of grade-11 of nawalparasi District. Conclude that higher secondary level student had positive attitude towards mathematics and higher secondary level boys and girl had significance difference

Cheung (1998) wrote about the attitude toward mathematics and the ages of 11-13year olds. He states that these ages are particularly important in the development of mathematical attitude. This is the time when negative attitudes become most noticeable. Although he goes to say that the reason behind this is unclear. Possible reasons behind this are the greater prevalence of abstractions in mathematics material. In his research, using a Pearson correlation, he found a positive correlation between attitude and mathematics achievement. The correlation showed that the more positive the attitude, the higher the level of achievement was in the student.

Joshi, (2014).Wrote in his study “A study on attitude of girls toward optional mathematics at secondary level”, Girls are often discouraged from mathematical work

in their primary years. They therefore dislike it in the secondary years. So they drop it at high grade levels in far greater numbers than boys. As a result, fewer women are employed in industry in post needing mathematical ability.

Farooq and Shah, (2008) Wrote about the attitude of students toward mathematics the male and female students of 10th grade of the secondary schools of Lahore have same type of attitude towards mathematics. It means that gender differential has no impact on the attitude of students towards mathematics in Pakistan. Pandit (1980), conducted his study entitled "Attitudes of secondary school students and their present towards mathematics and their parents towards mathematics and other subjects of instruction". He selected the randomly five secondary schools in Kathmandu district. He concluded that the students and their parents ranked mathematics the highest on most of the attitudes statements. The mean measure of the attitudes of the males students towards mathematics as a school subject was significantly greater than female students and attitude parents of male a student's exhibited a tendency to held a higher level of expectations from their sons in study of mathematics than parents of female students.

Mahamed and Hussian (2008), did his research on "Secondary Students' attitude towards mathematics in a selected school of maldives" The purpose of his study were to find out students' attitude towards mathematics and find out gender difference in attitude toward mathematics. He has selected 200 student from selected school of Maldives. Data collection procedure was questionnaire. Data was analyzed by Chi-square, t-test with 0.05 level of significance. The result shows that the students' positive attitude toward mathematics is medium and there is no gender difference in their attitudes.

Tiwari (2005) in his study "A comparative study of boys and girls attitude in mathematics" which he made in seven secondary school students of ninth grade in Lalitpur district concluded that both boys and girls hold positive attitudes that mathematics could be learned by anyone but boys seemed to exhibit higher percentage, in accept of this view. The correlation between attitudes of students and achievement of students were found to be significant. It showed that both were closely related with each other.

Baral (2005), did his research on "Attitude of orphan students towards mathematics and its relationship with their achievement" The objectives of his study were to find the orphan students attitude towards mathematics, to compare the relationship between attitude and achievement in mathematics. He has selected SOS Hermann Gmeiner School of Bhaktapur, Kaski, Kathmandu, Sunsari and Kavre district. He had taken one hundred and two orphan students including sixty boys and forty two girls by purposive sampling technique, Data collection procedure was questionnaire. Data was analyzed by t-test with 0.05 level of significance and Pearson product moment correlation coefficient. He concluded that orphan students have positive attitude towards mathematics. There are significant difference between orphan boys and girls students towards mathematics and orphan boys had achievement status is better than orphan girls in lower secondary level compulsory mathematics. There was significant relationship between orphan student's attitude towards mathematics and achievement in the subject.

Adhikari, (2014). Studied on his master thesis about attitude of secondary level student toward mathematics in terms of confidence level of student, usefulness of mathematics, male domain and perception toward their math teacher. And conclude

that secondary level student were confident in learning mathematics. Also he found secondary level student were able to know about necessity, importance and usefulness of mathematics. Then he conclude student of secondary level have positive attitude toward mathematics.

All the above mentioned studies reported that attitude of students toward mathematics is positive but some study showed that boy's boys are more positive than girls. But all the studies are done in secondary and higher secondary level. Till now there is no study about attitude of basic level student toward mathematics. Thus the researcher decided to conduct a research on the topic "Attitude of basic level students toward mathematics" in Dhading district.

Chapter-III

METHODS AND PROCEDURES

This chapter includes design of the study, population, sample and sampling process, data collection instrument, reliability and validity of data collection instrument, data collection process and data analysis procedure of the study.

Research Design

Kerlinger(1973) writes "research design is the plan, structure and strategy of investigation concerned so as to obtained answers to research question and to control the variance. The plan is the overall scheme or program of the research. It includes an outline of what the investigator wrote and the hypothesis and their operational implications to form the final analysis of data.

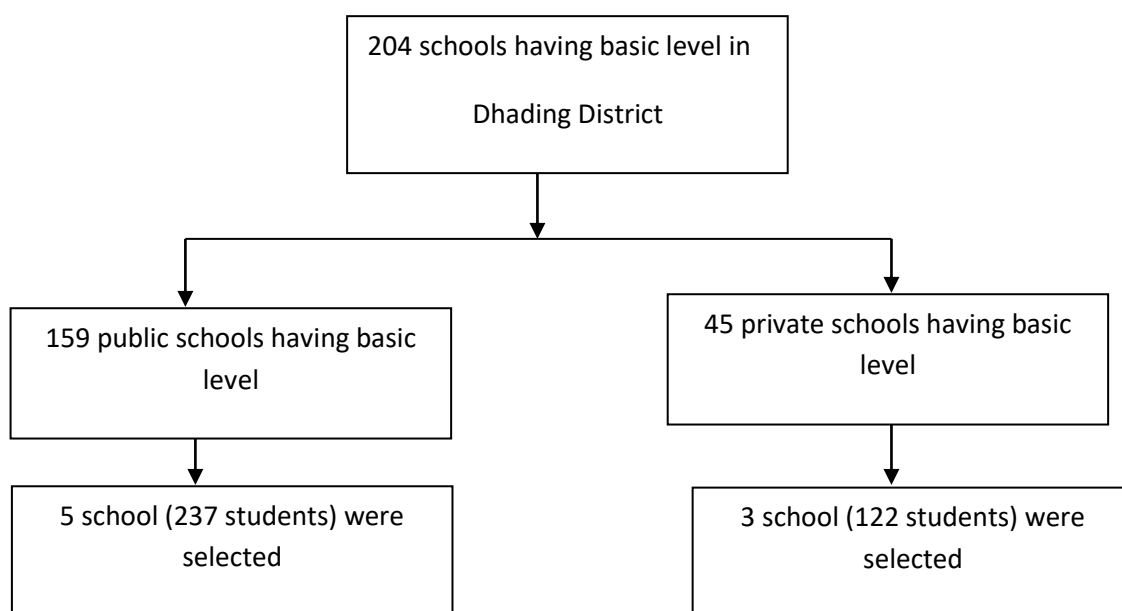
The design of research was survey. It is designed to compute students' attitude about mathematics and to compare the boys' attitude and girls' attitude towards mathematics in terms of confidence and usefulness. This study "Attitude of Basic Level School Students' toward Mathematics" was done using the Quantitative method. This was done by using Questionnaire for student, and use a Likert Scale to gather the data for the Quantitative aspect of the study. The information was put into Microsoft Excel to be analyzed the variables in the study. There also have interview for subject teacher to give open ended responses. The researcher kept record students' and teachers' reactions to the subject matter.

Population of the study

In an academic year 2072 B.S. there are 45 institutional and 159 community school having basic level in Dhading District (District Profile 2070 DEO, Dhading) The students studying in the basic level of the schools were population for the study.

Sample of the Study

To get the sample, stratified random sampling was adopted. Public school and private school of Dhading District was taken as two strata which are obtained by DEO, Dhading. Among the 204[159 public and 45 private] schools of Dhading district 8 (5 public and 3 private) schools having grade eight were chosen randomly. The population of the study considered of all of all the students and Mathematics teachers of grads VIII of sample school of Dhading district.



Source of information

In this study primary data were got by using questionnaire for student and interview for teacher.

Data Collection Tools

Every study needs to collect data. Likewise for this study one set of questionnaire and one set of interview schedule was another instrument. The construction process and validation of the tool in this study are described below:

Development of Instruments

- **Questionnaire Form**

A list of question entitled "A modified Fennema-Sherman Mathematics attitude scale" was used as an instrument for needed data. That scale had recently developed in the slandered form the to measure the attitude of basic level student of age group 10-14 years which consist 48 item having five opinions strongly agree, agree, neutral, disagree and strongly disagree for each item(See Appendix-A). This scale use for different aspect of mathematics like personal confidence about subject matter, usefulness of subject content and mathematics as a stereotype male domain etc.

- **Interview Schedule**

In any research only one tool may not be sufficient, and the data obtained from interview would be more reliable and accurate. So the open ended interview schedule was another instrument. It used to get the opinion from mathematics teacher of those sample school about attitude of students toward mathematics.

Data Collection Procedure

After selecting the sample school randomly. The researcher visited in the school with instrument to collect data. Before presentation of the tools investigator met the authorities and explained the objectives of the study in detail. After the principal of the school agreed to allow the study the researcher explained the purpose of the study to student. And provide the questionnaire to student to get the data with direct supervision. After getting response of all students, the questionnaire was taken back with thanks.

With the help of interview schedule, the interview was conducted with mathematics teacher and of those sample school

Reliability and Validity of Data Collection Tools

To find out reliability of modified F-S attitude scale, a pilot test conducted on thirty students of grade eight of New Arunodaya Higher Secondary School at Kathmandu District. The test-retest method will apply to test reliability and validity of modified F-S attitude scale.

Scoring Procedure

The scoring procedure of each items i.e. statement of the instruments as follows:

Meaning of rating	Rating positive statement	Rating negative statement
Strongly agree	5	1
Agree	4	2
Neutral	3	3
Disagree	2	4
Strongly disagree	1	5

Data Analysis Procedure

To analyze the gathered information used the χ^2 -test and t-test was used. By the help of χ^2 -test the attitude of basic level students was identified and through the use of t-test researcher compared the attitude of boys and girls at 0.05 level of significance. The data obtained from interview guideline were analyzed descriptively.

Chapter -IV

ANALYSIS AND INTERPRETATION OF DATA

This chapter deals with the analysis and interpretation of collected information of the study. The collected information from the informants was analyzed and interpreted to find the attitude of basic level students towards mathematics. It has already been mentioned that there was a set of questionnaire with five alternatives strongly agree, neutral, disagree, and strongly disagree. To test the attitude of students toward mathematics, Chi-Square test of significance as used as whole students and at 0.05 level of significance. And χ^2 -test and t-test was used to compare the attitude of boys and girl students towards mathematics.

This chapter presents the results of analysis with their interpretation. The analysis of the study was carried out under the following major heading corresponding to objectives of the study.

- Attitude of basic level student towards mathematics at basic level.
- Comparison between the attitudes of boys and girls students towards mathematics.

Attitude of Basic Level Student towards Mathematics

The sampled student were asked 48 statement with a questionnaire set (Appendix-A) in order to assess their attitude towards mathematics at basic level. To find out the attitude of students towards mathematics, the chi-square value was calculated on each statements of the questionnaire. The chi- square value on each statement with their statistical significance at 0.05 level of significance have been given in appendix-D. The attitude was also analyzed under following sub headings.

Students Confidence in learning mathematics

Confidence state being certain either that a hypothesis or prediction is correct or that a chosen course of is the best or most effective. It is a gateway to enter into the world of knowledge and can be regarded as a basis to do progress and get success. So in course of learning mathematics the first and essential condition is student confidence in learning math that motivates the students. Here the number of responses and chi-square values of confidence of all statement are tabulated below:

Table-1

Number of responses and chi-square values of confidence scale

S.N	Statements	Responses					Chi-Square	Conclusion
		SA	A	N	D	SD		
1	I am sure that I can learn math.	117	86	30	19	107	111.38	S
2	I am sure of myself when I do math.	128	79	21	36	95	105.71	S
3	I think I could handle more difficult math.	86	11	96	28	138	149.79	S
4	I can get good grades in math.	58	61	21	51	168	174.65	S
5	I know I can do well in math.	91	84	42	54	88	27.57	S
6	I am sure I could do advanced work in math.	84	25	75	60	115	60.49	S
7	I don't think I could do advanced math.	128	23	19	86	103	131.99	S
8	Math is hard for me.	117	35	25	49	133	136.85	S

9	I'm not the type to do well in math.	109	12	49	126	63	117.99	S
10	Math has been my worst subject.	110	18	26	39	166	227.79	S
11	Most subjects I can handle ok, but I just can't do a good job with math.	103	30	12	67	147	166.32	S
12	I'm not good in math.	82	53	33	63	128	72.21	S

Here the response under SA and A were considering under favorable responses and the responses under S and SD were considering under unfavorable responses. Table-1 shows that calculated chi-square value of all statements are greater than tabulated value. So most of the students were confident mathematics

Student attitude toward usefulness of math

Usefulness means quality of being useful. In the section of usefulness of math included the 12 statement related with use of math. And take the opinion of student about those statements. The table below shows number of response and corresponding chi-square value of each statement:

Table-2

Number of responses and chi-square values of usefulness scale

S.N.	Usefulness of mathematics	SA	A	N	D	SD	Chi Square	Conclusion
1	Knowing mathematics will help me earn a living.	134	116	68	30	11	156.68	S
2	I'll need mathematics for my future work.	111	81	67	58	42	37.82	S

3	Math is necessary subject.	127	116	65	42	9	137.21	S
4	I will use mathematics in many ways as adults.	142	98	63	40	16	136.35	S
5	I'll need a good understanding of math for my future work.	147	131	42	26	13	216.71	S
6	I study math because I Know how useful it is.	140	49	35	14	121	170.65	S
7	Math will not be important to me in my life's work.	135	14	7	23	180	355.88	S
8	I don't expect to use much math when I get out of school.	96	58	35	65	105	45.54	S
9	Taking math is a waste of time.	68	61	25	91	114	62.1	S
10	I see mathematics as something I won't use very often when I get out of high school.	32	53	70	93	111	54.54	S
11	Doing well in math is not import for my future.	23	60	75	86	115	63.88	S
12	Math is not important for my life.	14	28	32	11 9	166	249.24	S

In order to analyze the data of table-2 is similar process of table-1. Table-2 shows that calculated chi-square value of all statements are greater than tabulated value. So the above table shows the positivity of students toward mathematics.

Students' attitude toward mathematics in terms of stereotype as a male domain subject

The political, religious and cultural condition of society can affect the learning of mathematics. It is something believes that mathematics is a male domain subject

but it is not justified or authenticated by any conclusive research finding. Here the number of responses of sampled students and chi-square value of research statements of male domain scale are tabulated as below.

Table-3

Number of responses and chi-square values of male domain scale

S.N.	Stereotype of mathematics as male domain	SA	A	N	D	SD	Chi-square	Conclusion
1	Males are not naturally better than female in math.	128	54	11	47	119	139.1	S
2	Women can do just as well as men in math.	96	28	67	58	110	58.01	S
3	Females are as good as males in geometry	95	60	44	30	130	91.46	S
4	Women certainly are smart enough to do well in math.	110	20	77	33	119	109.76	S
5	Studying math is just as good for women as for men.	112	24	68	53	102	71.96	S
6	I would trust a female just as much as I would trust a male to solve important math problems.	130	86	74	54	15	99.13	S
7	It's hard to believe a female could be a genius in mathematics.	105	32	58	28	136	123.85	S
8	When a woman has to solve a math problem, she should ask a man for help.	77	51	23	98	110	69.26	S

9	I would have more faith in the answer for a math problem solved by a man than a woman.	11	25	56	121	146	195.32	S
10	Women who enjoy studying math are a little strange.	67	47	35	98	112	59.65	S
11	I would expect a woman mathematician to be a forceful type of person.	16	49	82	93	119	89.1	S
12	Male teacher can teach math more effectively than females.	105	32	68	28	126	104.96	S

Since, in above table calculated chi-square value is greater than tabulated chi-square value. Thus all statements are significance. It means student do not regard mathematics as male domain subject. It means most of students agree with the statements of male domain scale.

Student's attitude toward Perception of student toward their mathematics teacher

Perception is the organization, identification and interpretation of sensory information in order to represent and understand the environment. In learning math, the pattern of perceptual learning is important. The table-4 shows the number of responses and chi-square values of the statement enlisted in the teacher perception scale.

Table-4

Number of responses and chi-square values of Perception of student toward their mathematics teacher scale.

	Perception of student toward their mathematics teacher	SA	A	N	D	SD	Chi-square	Conclusion
1	My teachers have been interested in my progress in math	105	77	47	89	41	41.51	S
2	I would talk to my math teachers about a career that uses math.	98	100	56	53	52	34.4	S
3	My teachers have encouraged me to study more math.	77	119	63	74	26	61.6	S
4	My teachers want me to take the entire math I can.	67	109	53	70	60	26.43	S
5	Math teachers have made me feel I have the ability to go on in mathematics.	138	35	47	39	100	114.21	S
6	My teachers think I'm the kind of person who could do well in math.	119	75	33	51	81	59.18	S
7	Getting a teacher to take me seriously in math is a problem.	44	51	82	103	79	32.43	S
8	It's hard to get math teachers to respect me.	95	46	58	56	104	37.24	S
9	I have a hard time getting teachers to seriously with me about math.	47	58	74	115	65	37.82	S

10	My teachers think advanced math will be a waste of time for me.	86	40	26	111	96	75.46	S
11	I feel that math teachers ignore me when I try to talk about something serious.	46	51	60	93	109	42.65	S
12	My teachers would not take me seriously If I told them I was interested in a career in science and mathematics.	44	82	51	112	70	40.68	S

From the above table all calculated chi square value is more than tabulated chi square value. So all statements are significance. It can be considered that most of the students had good perception toward their mathematics teacher. Also the mean score is 3.1. It shows that students had good attitude toward perception of students toward their math teacher.

Comparison between the attitude of boys and girls students toward mathematics at basic level.

The boys and girls students were asked 48 statements in as questionnaire (Appendix-A) in order to assess their attitude towards mathematics. The second objective of this study was to compare attitude of boys and girls toward mathematics. Since one aspect under the study to measure attitude in learning mathematics,

therefore to achieve this objective, the researcher analyzed the data on the basis of responses of 182 boys and 177 girls students in attitude scales.

The mean, variance and corresponding t-value of the attitude score of boys students (see Appendix-G) and Girls students (see Appendix -F) of secondary level are presented in the table below.

Comparison	Sample Size	Mean	Standard Deviation	d.f.	t-value	conclusion
Boys	182	3.94	0.76	357	0.17	<1.96 NS
Girls	177	3.96	0.77			

NS: not significance

The data presented in the above table shows that there were 182 boys and 177 girls student. The mean of attitude score of each statement regarding the number of boys and girls students were 2.94 and 2.96 respectively. Again their variances were 0.76 and 0.77 respectively. It indicates that there was a little bit difference in the attitude score of boys and girls students and mean value of girls student was greater than boys student implying that the girls had stronger attitude than boys student in mathematics. Since it was tested whether there was significant difference or not between the attitude of boys and girls student toward mathematics at basic level, the above table shows that the obtained t-value 0.17 is less than tabulated value 1.96 at 0.05 level of significance with 357 degree of freedom. Thus the researcher concluded that there was no significant difference between boys and girls students in terms of their attitude toward mathematics at basic level.

Teacher's view about attitude of students toward mathematics

In this study, it has been researched that type of attitude of basic level student towards mathematics. Through this it has been positive attitude to most of students. But most of students are weak and fail in exam. To find the reason of this

mathematics teacher of sample school have been interviewed. The question for those teacher is ‘why do the students fail and are weak in mathematics?’ And discuss about the attitude of students toward mathematics. They have given the following ideas:

Some of the teachers are not trained and qualified. They do not use appropriate method and materials. So the students are weak and fail in exam. (Teachers' view)

From the above teachers view some of the public and private secondary teachers are not taken training of teaching mathematics. They are not confidence in their teaching. They are not used the teaching materials. Thus, most of students are weak and fail in mathematics.

Most of students copy homework from their book, guide and talented students' work. The parents of the students are uneducated; they are not provided the time for doing their homework they do not give the guideline. (Teachers' view)

From the above teacher's views most of the students are doing homework but they copy from their textbook, guess paper and others student's work. They cannot do the homework themselves so they have no creative logical to solve the mathematical problems. The parents and subject teachers had no communication about the homework of students. Thus, the students are weak and fail in mathematics.

Most of the teacher always provided homework to the students but they do not check and write the comments and suggestions after given the homework so the students are weak and fail in mathematics. (Teachers' view)

From this teachers view, in public school most of the teachers are lazy to check homework of the students. They give the homework to the students but they do not check and do not write comments and suggestions so the students cannot find out their weakness and change of progress in mathematics. Thus teachers only give the homework to the student is not sufficient. They must check, write comments and give suggestion for progress in mathematics at basic level.

Hence from the above teacher's view most of the student's homework copy from the test book, guide, guess paper and talented students, some of the secondary teachers are not trained about teaching methods and use of teaching materials, the teachers give the homework to the students but they do not checked, write comments and suggestions for their homework. The parents and subject teachers had no communication about the students' homework. So most of the students are weak and fail in mathematics. And also students are weak and fail in mathematics due to the weakness of their parents, teachers and school administrator. Thus most of students are weak and fail in mathematics even though they had positive attitude towards mathematics.

Chapter-V

SUMMARY, FINDINGS, CONCLUSION AND RECOMMENATION

After making analysis and interpretation of data in Chapter IV, this chapter has been devoted to summary, finding, conclusion and Recommendation for further study, summary of the study, major finding conclusion and recommendation have been considered in sequence under sub-headings.

Summary

The study was carried out examine the attitude of basic level students towards mathematics. Especially the objectives of this study were to find out the attitude of basic students towards mathematics, to compare between the attitude of boys and girls students towards mathematics. To achieve these objectives of the study, the investigator gathered data by the method of questionnaire survey and used 'Likert' attitude scale as a tool. The population of the study was considered as all the students of the basic level students of dhading district. Sample of the study was considered as all the basic level students 8 schools as per listed in the appendix-F out of 359 students 182 were boys and 177 were girls students.

A set of questionnaires were developed as the tools for collection data. It was based on F-S. attitude scale, which includes statements related to mathematics activities. The questionnaire consisted of four level of statements classified as confidence in mathematics, usefulness of mathematics, mathematics as a male domain and perception of students towards their math teacher. The questionnaire developed was administered to the sample students according to the instruction given Likert-type scale was used to collect data from the statements of questionnaire. The χ^2 -test, mean

attitude score and percentage was used to determine the attitude of students towards mathematics at basic level. And the t-test, mean score, standard deviation was also used to compare the attitude of boys and girl students towards mathematics.

As per the analysis of χ^2 -value, mean attitude score and percentage of each statements the majority of students are in the favor of positive statements. It means all of the students had positive attitude towards mathematics. Furthermore, t-test, mean, standard deviation score of boys and girl students, which shows that there were no significance difference between boys and girls students towards mathematics.

Findings

In the study, the researcher was selected 8 schools (5 public and 3 private) having basic level in dhading district for the objectives of the study. All together 359 students were considered as the sample among them 182 boys and 177 girls were selected. When the data was collected and tabulated then analyzed by using χ^2 -test, t-test, mean attitude score, percentage, and standard deviation. After statistical analysis of the collected data the researcher yielded the following results as findings of the

- The basic level students had a positive attitude towards mathematics.
- Basic level students were confidence in learning mathematics.
- The basic level students were able to know about importance and usefulness of mathematics.
- Basic level students had same faith in both boys and girls in coeerce of doing mathematics.
- The t-value of the boys and girls students is 0.17. And the mean score of boys and girls students is 2.94 and 2.96 respectively.

- Most of the teachers give the homework to the students but they do not check and write the comments, teachers are not trained and qualified they do not use appropriate teaching method and materials. So the students are weak and fail in mathematics even though they have positive attitude towards homework.
- Most of the students are copy their homework from text book, guide, guess paper, talent student's work.
- The weakness of school administrator and lack of the home environment, students are weak and fail in mathematics even though they had positive attitude towards homework.

Conclusions

On the basis of finding presented in the previous section the following conclusion was drawn about the attitude of students towards mathematics. On the whole basic students had positive attitude towards mathematics. The boys and girls students had a positive attitude towards homework. The boys and girls student had no significance difference. They had similar attitudes towards mathematics. Most of the students are weak and fail in mathematics even though they had positive attitude because weakness of the teacher, parents and school administrator.

Recommendations for further study

The conclusion of the study may not be generalized to all students due to limitation contained in the study. On the basis of the study the following recommendation have been given.

- Taking wider coverage should make similar study.

- Such study should be made for lower and upper level of students.
- Beside questionnaire interview should be taken from students so as to study attitude towards mathematics.
- This study examined only students towards mathematics at basic level.
It better to include parents and teachers in such studies.

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Appendix A

Modified Fennema-Sherman Mathematics Attitude Scale

Dear Students,

I am from the central department of the mathematics educations, TU, Kirtipur to conduct a research on the attitude of basic level students toward mathematics which is for the partial fulfillment of the requirements for the degree of master of education.

There are forty eight statements that you have to response. For each statement there are five choices. There is neither rights not wrong statement they only depend on your view. So tick the choice which you think appropriate.

Name of student: -

School's name: -

S.N.	Statements	SA	A	N	D	SD
	Confidence in mathematics					
1	I am sure that I can learn math.					
2	I am sure of myself when I do math.					
3	I think I could handle more difficult math.					
4	I can get good grades in math.					
5	I know I can do well in math.					
6	I am sure I could do advanced work in math.					
7	I don't think I could do advanced math.					
8	Math is hard for me.					
9	I'm not the type to do well in math.					
10	Math has been my worst subject.					
11	Most subjects I can handle ok, but I just can't do a good job with math.					
12	I'm not good in math.					

	Usefulness of mathematics					
13	Knowing mathematics will help me earn a living.					
14	I'll need mathematics for my future work.					
15	Math is necessary subject.					
16	I will use mathematics in many ways as adults.					
17	I'll need a good understanding of math for my future work.					
18	I study math because I Know how useful it is.					
19	Math will not be important to me in my life's work.					
20	I don't expect to use much math when I get out of school.					
21	Taking math is a waste of time.					
22	I see mathematics as something I won't use very often when I get out of high school.					
23	Doing well in math is not import for my future.					
24	Math is not important for my life.					
	Stereotype of mathematics as male domain					
25	Males are not naturally better than female in math.					
26	Women can do just as well as men in math.					
27	Females are as good as males in geometry					
28	Women certainly are smart enough to do well in math.					
29	Studying math is just as good for women as for men.					
30	I would trust a female just as much as I would trust a male to solve important math problems.					
31	It's hard to believe a female could be a genius in mathematics.					
32	When a woman has to solve a math problem,					

	she should ask a man for help.					
33	I would have more faith in the answer for a math problem solved by a man than a woman.					
34	Women who enjoy studying math are a little strange.					
35	I would expect a woman mathematician to be a forceful type of person.					
36	Male teacher can teach math more effectively than females.					
	Perception of student toward their mathematics teacher					
37	My teachers have been interested in my progress in math					
38	I would talk to my math teachers about a career that uses math.					
39	My teachers have encouraged me to study more maths.					
40	My teachers want me to take the entire math I can.					
41	Math teachers have made me feel I have the ability to go on in mathematics.					
42	My teachers think I'm the kind of person who could do well in math.					
43	Getting a teacher to take me seriously in math is a problem.					
44	It's hard to get math teachers to respect me.					
45	I have a hard time getting teachers to seriously with me about math.					
46	My teachers think advanced math will be a waste of time for me.					
47	I feel that math teachers ignore me when I try to talk about something serious.					

48	My teachers would not take me seriously If I told them I was interested in a career in science and mathematics.					
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Note :

SA-Strongly Agree

A-Agree

N- Neutral

D-Disagree

SD- Strongly Disagree

Appendix-B

Responses of Sample students about the attitude of basic level students toward mathematics.

S.N.	Statements	SA	A	N	D	SD
	Confidence in mathematics					
1	I am sure that I can learn math.	117	86	30	19	107
2	I am sure of myself when I do math.	128	79	21	36	95
3	I think I could handle more difficult math.	86	11	96	28	138
4	I can get good grades in math.	58	61	21	51	168
5	I know I can do well in math.	91	84	42	54	88
6	I am sure I could do advanced work in math.	84	25	75	60	115
7	I don't think I could do advanced math.	128	23	19	86	103
8	Math is hard for me.	117	35	25	49	133
9	I'm not the type to do well in math.	109	12	49	126	63
10	Math has been my worst subject.	110	18	26	39	166
11	Most subjects I can handle ok, but I just can't do a good job with math.	103	30	12	67	147
12	I'm not good in math.	82	53	33	63	128
	Usefulness of mathematics					
13	Knowing mathematics will help me earn a living.	134	116	68	30	11
14	I'll need mathematics for my future work.	111	81	67	58	42
15	Math is necessary subject.	127	116	65	42	9
16	I will use mathematics in many ways as adults.	142	98	63	40	16
17	I'll need a good understanding of math for my future work.	147	131	42	26	13
18	I study math because I know how useful it is.	140	49	35	14	121
19	Math will not be important to me in my life's work.	135	14	7	23	180

20	I don't expect to use much math when I get out of school.	96	58	35	65	105
21	Taking math is a waste of time.	68	61	25	91	114
22	I see mathematics as something I won't use very often when I get out of school.	32	53	70	93	111
23	Doing well in math is not import for my future.	23	60	75	86	115
24	Math is not important for my life.	14	28	32	119	166
	Stereotype of mathematics as male domain					
25	Males are not naturally better than female in math.	128	54	11	47	119
26	Women can do just as well as men in math.	96	28	67	58	110
27	Females are as good as males in geometry	95	60	44	30	130
28	Women certainly are smart enough to do well in math.	110	20	77	33	119
29	Studying math is just as good for women as for men.	112	24	68	53	102
30	I would trust a female just as much as I would trust a male to solve important math problems.	130	86	74	54	15
31	It's hard to believe a female could be a genius in mathematics.	105	32	58	28	136
32	When a woman has to solve a math problem, she should ask a man for help.	77	51	23	98	110
33	I would have more faith in the answer for a math problem solved by a man than a woman.	11	25	56	121	146
34	Women who enjoy studying math are a little strange.	67	47	35	98	112
35	I would expect a woman mathematician to be a forceful type of person.	16	49	82	93	119
36	Male teacher can teach math more effectively than females.	105	32	68	28	126

	Perception of student toward their mathematics teacher					
37	My teachers have been interested in my progress in math	105	77	47	89	41
38	I would talk to my math teachers about a career that uses math.	98	100	56	53	52
39	My teachers have encouraged me to study more maths.	77	119	63	74	26
40	My teachers want me to take the entire math I can.	67	109	53	70	60
41	Math teachers have made me feel I have the ability to go on in mathematics.	138	35	47	39	100
42	My teachers think I'm the kind of person who could do well in math.	119	75	33	51	81
43	Getting a teacher to take me seriously in math is a problem.	44	51	82	103	79
44	It's hard to get math teachers to respect me.	95	46	58	56	104
45	I have a hard time getting teachers to seriously with me about math.	47	58	74	115	65
46	My teachers think advanced math will be a waste of time for me.	86	40	26	111	96
47	I feel that math teachers ignore me when I try to talk about something serious.	46	51	60	93	109
48	My teachers would not take me seriously If I told them I was interested in a career in science and mathematics.	44	82	51	112	70

Appendix-C

Attitude Score and Mean Score Obtained by students about attitude of basic level students toward mathematics.

S.N.	Statements	SA	A	N	D	SD	Total score	Mean
	Confidence in mathematics							
1	I am sure that I can learn math.	585	344	90	38	107	1164	3.24
2	I am sure of myself when I do math.	640	316	63	72	95	1186	3.3
3	I think I could handle more difficult math.	430	44	288	56	138	956	2.66
4	I can get good grades in math.	290	244	63	102	168	867	2.42
5	I know I can do well in math.	455	336	126	108	88	1113	3.1
6	I am sure I could do advanced work in math.	420	100	225	120	115	980	2.73
7	I don't think I could do advanced math.	640	92	57	172	103	1064	2.96
8	Math is hard for me.	585	140	75	98	133	1031	2.87
9	I'm not the type to do well in math.	545	48	147	252	63	1055	2.94
10	Math has been my worst subject.	550	72	78	78	166	944	2.63
11	Most subjects I can handle ok, but I just can't do a good job with math.	515	120	36	134	147	952	2.65
12	I'm not good in math.	410	212	99	126	128	975	2.72
	Usefulness of mathematics							
13	Knowing mathematics will help me earn a living.	670	464	204	60	11	1409	3.92

14	I'll need mathematics for my future work.	555	324	201	116	42	1238	3.45
15	Math is necessary subject.	635	464	195	84	9	1387	3.86
16	I will use mathematics in many ways as adults.	710	392	189	80	16	1387	3.86
17	I'll need a good understanding of math for my future work.	735	524	126	52	13	1450	4.04
18	I study math because I know how useful it is.	700	196	105	28	121	1150	3.2
19	Math will not be important to me in my life's work.	675	56	21	46	180	978	2.72
20	I don't expect to use much math when I get out of school.	480	232	105	130	105	1052	2.93
21	Taking math is a waste of time.	340	244	75	182	114	955	2.66
22	I see mathematics as something I won't use very often when I get out of high school.	160	212	210	186	111	879	2.45
23	Doing well in math is not important for my future.	115	240	225	172	115	867	2.42
24	Math is not important for my life.	70	112	96	238	166	682	1.9
	Stereotype of mathematics as male domain							
25	Males are not naturally better than female in math.	640	216	33	94	119	1102	3.07
26	Women can do just as well as men in math.	480	112	201	116	110	1019	2.84
27	Females are as good as males in geometry	475	240	132	60	130	1037	2.89
28	Women certainly are smart enough to do well in math.	550	80	231	66	119	1046	2.91

29	Studying math is just as good for women as for men.	560	96	204	106	102	1068	2.97
30	I would trust a female just as much as I would trust a male to solve important math problems.	650	344	222	108	15	1339	3.73
31	It's hard to believe a female could be a genius in mathematics.	525	128	174	56	136	1019	2.84
32	When a woman has to solve a math problem, she should ask a man for help.	385	204	69	196	110	964	2.69
33	I would have more faith in the answer for a math problem solved by a man than a woman.	55	100	168	242	146	711	1.98
34	Women who enjoy studying math are a little strange.	335	188	105	196	112	936	2.61
35	I would expect a woman mathematician to be a forceful type of person.	80	196	246	186	119	827	2.3
36	Male teacher can teach math more effectively than females.	525	128	204	56	126	1039	2.89
	Perception of student toward their mathematics teacher							
37	My teachers have been interested in my progress in math	525	308	141	178	41	1193	3.32
38	I would talk to my math teachers about a career that uses math.	490	400	168	106	52	1216	3.39

39	My teachers have encouraged me to study more maths.	385	476	189	148	26	1224	3.41
40	My teachers want me to take the entire math I can.	335	436	159	140	60	1130	3.15
41	Math teachers have made me feel I have the ability to go on in mathematics.	690	140	141	78	100	1149	3.2
42	My teachers think I'm the kind of person who could do well in math.	595	300	99	102	81	1177	3.28
43	Getting a teacher to take me seriously in math is a problem.	220	204	246	206	79	955	2.66
44	It's hard to get math teachers to respect me.	475	184	174	112	104	1049	2.92
45	I have a hard time getting teachers to seriously with me about math.	235	232	222	230	65	984	2.74
46	My teachers think advanced math will be a waste of time for me.	430	160	78	222	96	986	2.75
47	I feel that math teachers ignore me when I try to talk about something serious.	230	204	180	186	109	909	2.53
48	My teachers would not take me seriously If I told them I was interested in a career in science and mathematics.	220	328	153	224	70	995	2.77

Total mean score=2.95

Appendix-D

Chi-square value Obtained by students about attitude of basic level students toward mathematics.

S.N.	Statements	Chi-Square	Significance
	Confidence in mathematics		
1	I am sure that I can learn math.	111.38	S
2	I am sure of myself when I do math.	105.71	S
3	I think I could handle more difficult math.	149.79	S
4	I can get good grades in math.	174.65	S
5	I know I can do well in math.	27.57	S
6	I am sure I could do advanced work in math.	60.49	S
7	I don't think I could do advanced math.	131.99	S
8	Math is hard for me.	136.85	S
9	I'm not the type to do well in math.	117.99	S
10	Math has been my worst subject.	227.79	S
11	Most subjects I can handle ok, but I just can't do a good job with math.	166.32	S
12	I'm not good in math.	72.21	S
	Usefulness of mathematics		
13	Knowing mathematics will help me earn a living.	156.68	S
14	I'll need mathematics for my future work.	37.82	S
15	Math is necessary subject.	137.21	S
16	I will use mathematics in many ways as adults.	136.35	S
17	I'll need a good understanding of math for my future work.	216.71	S
18	I study math because I Know how useful it is.	170.65	S

19	Math will not be important to me in my life's work.	355.88	S
20	I don't expect to use much math when I get out of school.	45.54	S
21	Taking math is a waste of time.	62.10	S
22	I see mathematics as something I won't use very often when I get out of high school.	54.54	S
23	Doing well in math is not import for my future.	63.88	S
24	Math is not important for my life.	249.24	S
	Stereotype of mathematics as male domain		
25	Males are not naturally better than female in math.	139.10	S
26	Women can do just as well as men in math.	58.01	S
27	Females are as good as males in geometry	91.46	S
28	Women certainly are smart enough to do well in math.	109.76	S
29	Studying math is just as good for women as for men.	71.96	S
30	I would trust a female just as much as I would trust a male to solve important math problems.	99.13	S
31	It's hard to believe a female could be a genius in mathematics.	123.85	S
32	When a woman has to solve a math problem, she should ask a man for help.	69.26	S
33	I would have more faith in the answer for a math problem solved by a man than a woman.	195.32	S
34	Women who enjoy studying math are a little strange.	59.65	S
35	I would expect a woman mathematician to be a forceful type of person.	89.10	S
36	Male teacher can teach math more effectively than females.	104.96	S
	Perception of student toward their mathematics teacher		

37	My teachers have been interested in my progress in math	41.51	S
38	I would talk to my math teachers about a career that uses math.	34.40	S
39	My teachers have encouraged me to study more maths.	61.60	S
40	My teachers want me to take the entire math I can.	26.43	S
41	Math teachers have made me feel I have the ability to go on in mathematics.	114.21	S
42	My teachers think I'm the kind of person who could do well in math.	59.18	S
43	Getting a teacher to take me seriously in math is a problem.	32.43	S
44	It's hard to get math teachers to respect me.	37.24	S
45	I have a hard time getting teachers to seriously with me about math.	37.82	S
46	My teachers think advanced math will be a waste of time for me.	75.46	S
47	I feel that math teachers ignore me when I try to talk about something serious.	42.65	S
48	My teachers would not take me seriously If I told them I was interested in a career in science and mathematics.	40.68	S

$$\chi_{4,0.05}^2=9.49$$

S=Significance

NS=Not Significance

Appendix-E

S.N.	Statements	Agree%	Neutral%	Disagree%
	Confidence in mathematics			
1	I am sure that I can learn math.	56.55	8.36	35.1
2	I am sure of myself when I do math.	57.66	5.85	36.49
3	I think I could handle more difficult math.	27.02	26.74	46.24
4	I can get good grades in math.	33.15	5.85	61
5	I know I can do well in math.	48.75	11.7	39.55
6	I am sure I could do advanced work in math.	30.36	20.89	48.75
7	I don't think I could do advanced math.	42.06	5.29	52.65
8	Math is hard for me.	42.34	6.96	50.7
9	I'm not the type to do well in math.	33.7	13.65	52.65
10	Math has been my worst subject.	35.65	7.24	57.1
11	Most subjects I can handle ok, but I just can't do a good job with math.	37.05	3.34	59.61
12	I'm not good in math.	37.6	9.19	53.2
	Usefulness of mathematics			
13	Knowing mathematics will help me earn a living.	69.64	18.94	11.42
14	I'll need mathematics for my future work.	53.48	18.66	27.86
15	Math is necessary subject.	67.69	18.11	14.21
16	I will use mathematics in many ways as adults.	66.85	17.55	15.6
17	I'll need a good understanding of math for my future work.	77.44	11.7	10.86
18	I study math because I know how useful it is.	52.65	9.75	37.6
19	Math will not be important to me in my	41.5	1.95	56.55

	life's work.			
20	I don't expect to use much math when I get out of school.	42.9	9.75	47.35
21	Taking math is a waste of time.	35.93	6.96	57.1
22	I see mathematics as something I won't use very often when I get out of school.	23.68	19.5	56.82
23	Doing well in math is not import for my future.	23.12	20.89	55.99
24	Math is not important for my life.	11.7	8.91	79.39
	Stereotype of mathematics as male domain			
25	Males are not naturally better than female in math.	50.7	3.06	46.24
26	Women can do just as well as men in math.	34.54	18.66	46.8
27	Females are as good as males in geometry	43.18	12.26	44.57
28	Women certainly are smart enough to do well in math.	36.21	21.45	42.34
29	Studying math is just as good for women as for men.	37.88	18.94	43.18
30	I would trust a female just as much as I would trust a male to solve important math problems.	60.17	20.61	19.22
31	It's hard to believe a female could be a genius in mathematics.	38.16	16.16	45.68
32	When a woman has to solve a math problem, she should ask a man for help.	35.65	6.41	57.94
33	I would have more faith in the answer for a math problem solved by a man than a woman.	10.03	15.6	74.37
34	Women who enjoy studying math are a little strange.	31.75	9.75	58.5

35	I would expect a woman mathematician to be a forceful type of person.	18.11	22.84	59.05
36	Male teacher can teach math more effectively than females.	38.16	18.94	42.9
	Perception of student toward their mathematics teacher			
37	My teachers have been interested in my progress in math	50.7	13.09	36.21
38	I would talk to my math teachers about a career that uses math.	55.15	15.6	29.25
39	My teachers have encouraged me to study more math.	54.6	17.55	27.86
40	My teachers want me to take the entire math I can.	49.03	14.76	36.21
41	Math teachers have made me feel I have the ability to go on in mathematics.	48.19	13.09	38.72
42	My teachers think I'm the kind of person who could do well in math.	54.04	9.19	36.77
43	Getting a teacher to take me seriously in math is a problem.	26.46	22.84	50.7
44	It's hard to get math teachers to respect me.	39.28	16.16	44.57
45	I have a hard time getting teachers to seriously with me about math.	29.25	20.61	50.14
46	My teachers think advanced math will be a waste of time for me.	35.1	7.24	57.66
47	I feel that math teachers ignore me when I try to talk about something serious.	27.02	16.71	56.27
48	My teachers would not take me seriously If I told them I was interested in a career in science and mathematics.	35.1	14.21	50.7

Agree= Strongly Agree+Agree, Disagree=Strongly Disagree+Disagree

Appendix-F

Response of girls students

S.N.	Statements	Girls					Average Score
		SA	A	N	D	SD	
	Confidence in mathematics						
1	I am sure that I can learn math.	53	41	15	9	59	3.11
2	I am sure of myself when I do math.	58	40	11	17	51	3.21
3	I think I could handle more difficult math.	39	5	44	13	76	2.54
4	I can get good grades in math.	26	29	11	24	87	2.34
5	I know I can do well in math.	41	40	21	26	49	2.99
6	I am sure I could do advanced work in math.	38	12	36	28	63	2.63
7	I don't think I could do advanced math.	48	11	36	35	47	2.88
8	Math is hard for me.	53	17	13	23	73	2.77
9	I'm not the type to do well in math.	49	9	25	59	35	2.88
10	Math has been my worst subject.	50	9	13	18	87	2.53
11	Most subjects I can handle ok, but I just can't do a good job with math.	46	14	6	32	79	2.53
12	I'm not good in math.	37	25	17	30	68	2.62
	Usefulness of mathematics	0	0	0	0	0	0
13	Knowing mathematics will help me earn a living.	66	56	35	14	6	3.92
14	I'll need mathematics for my future work.	54	39	34	27	23	3.42
15	Math is necessary subject.	63	56	33	20	5	3.86
16	I will use mathematics in many ways as adults.	64	47	32	25	9	3.75
17	I'll need a good understanding of math for my future work.	66	63	29	12	7	3.95

18	I study math because I Know how useful it is.	63	24	17	7	66	3.06
19	Math will not be important to me in my life's work.	61	7	4	11	94	2.6
20	I don't expect to use much math when I get out of school.	43	28	18	31	57	2.82
21	Taking math is a waste of time.	31	29	13	43	61	2.58
22	I see mathematics as something I won't use very often when I get out of high school.	14	25	36	44	58	2.4
23	Doing well in math is not import for my future.	10	29	34	40	64	2.33
24	Math is not important for my life.	6	13	14	56	88	1.83
	Stereotype of mathematics as male domain	0	0	0	0	0	0
25	Males are not naturally better than female in math.	70	28	5	23	51	3.24
26	Women can do just as well as men in math.	53	17	30	28	49	2.98
27	Females are as good as males in geometry	52	31	20	14	60	3.01
28	Women certainly are smart enough to do well in math.	61	12	35	16	53	3.07
29	Studying math is just as good for women as for men.	62	12	31	26	46	3.1
30	I would trust a female just as much as I would trust a male to solve important math problems.	71	45	28	26	7	3.83
31	It's hard to believe a female could be a genius in mathematics.	58	17	26	15	61	2.98
32	When a woman has to solve a math problem, she should ask a man for help.	42	27	10	48	50	2.79

33	I would have more faith in the answer for a math problem solved by a man than a woman.	6	13	25	63	70	1.99
34	Women who enjoy studying math are a little strange.	37	24	16	47	53	2.69
35	I would expect a woman mathematician to be a forceful type of person.	9	25	37	52	54	2.34
36	Male teacher can teach math more effectively than females.	58	17	30	13	59	3.01
	Perception of student toward their mathematics teacher	0	0	0	0	0	0
37	My teachers have been interested in my progress in math	55	40	21	43	18	3.4
38	I would talk to my math teachers about a career that uses math.	53	52	24	25	23	3.49
39	My teachers have encouraged me to study more maths.	42	62	28	33	12	3.5
40	My teachers want me to take the entire math I can.	37	56	23	34	27	3.24
41	Math teachers have made me feel I have the ability to go on in mathematics.	74	18	21	19	45	3.32
42	My teachers think I'm the kind of person who could do well in math.	62	39	16	24	36	3.38
43	Getting a teacher to take me seriously in math is a problem.	28	27	37	49	36	2.79
44	It's hard to get math teachers to respect me.	52	24	26	27	48	3.03
45	I have a hard time getting teachers to seriously with me about math.	26	30	34	58	29	2.81
46	My teachers think advanced math will be a waste of time for me.	47	21	12	53	44	2.85

47	I feel that math teachers ignore me when I try to talk about something serious.	29	27	27	45	49	2.67
48	My teachers would not take me seriously If I told them I was interested in a career in science and mathematics.	24	43	23	54	33	2.84

Total mean score=2.96

Appendix-G

Response of boy students

S.N.	Statements	Boys					Mean Score
		SA	A	N	D	SD	
	Confidence in mathematics						
1	I am sure that I can learn math.	64	45	15	10	48	3.37
2	I am sure of myself when I do math.	70	39	10	19	44	3.4
3	I think I could handle more difficult math.	47	6	52	15	62	2.79
4	I can get good grades in math.	32	32	10	27	81	2.49
5	I know I can do well in math.	50	44	21	28	39	3.21
6	I am sure I could do advanced work in math.	46	13	39	32	52	2.83
7	I don't think I could do advanced math.	80	12	-17	51	56	3.05
8	Math is hard for me.	64	18	12	26	60	2.97
9	I'm not the type to do well in math.	60	3	24	67	28	3
10	Math has been my worst subject.	60	9	13	21	79	2.73
11	Most subjects I can handle ok, but I just can't do a good job with math.	57	16	6	35	68	2.77
12	I'm not good in math.	45	28	16	33	60	2.81
	Usefulness of mathematics	0	0	0	0	0	0
13	Knowing mathematics will help me earn a living.	68	60	33	16	5	3.93
14	I'll need mathematics for my future work.	57	42	33	31	19	3.48
15	Math is necessary subject.	64	60	32	22	4	3.87
16	I will use mathematics in many ways as adults.	78	51	31	15	7	3.98
17	I'll need a good understanding of math for my future work.	81	68	13	14	6	4.12
18	I study math because I know how useful it is.	77	25	18	7	55	3.34
19	Math will not be important to me in my life's work.	74	7	3	12	86	2.84
20	I don't expect to use much math when I get out of school.	53	30	17	34	48	3.03
21	Taking math is a waste of time.	37	32	12	48	53	2.74

22	I see mathematics as something I won't use very often when I get out of high school.	18	28	34	49	53	2.5
23	Doing well in math is not import for my future.	13	31	41	46	51	2.5
24	Math is not important for my life.	8	15	18	63	78	1.97
	Stereotype of mathematics as male domain	0	0	0	0	0	0
25	Males are not naturally better than female in math.	58	26	6	24	68	2.9
26	Women can do just as well as men in math.	43	11	37	30	61	2.7
27	Females are as good as males in geometry	43	29	24	16	70	2.77
28	Women certainly are smart enough to do well in math.	49	8	42	17	66	2.76
29	Studying math is just as good for women as for men.	50	12	37	27	56	2.85
30	I would trust a female just as much as I would trust a male to solve important math problems.	59	41	46	28	8	3.63
31	It's hard to believe a female could be a genius in mathematics.	47	15	32	13	75	2.7
32	When a woman has to solve a math problem, she should ask a man for help.	35	24	13	50	60	2.58
33	I would have more faith in the answer for a math problem solved by a man than a woman.	5	12	31	58	76	1.97
34	Women who enjoy studying math are a little strange.	30	23	19	51	59	2.53
35	I would expect a woman mathematician to be a forceful type of person.	7	24	45	41	65	2.27
36	Male teacher can teach math more effectively than females.	47	15	38	15	67	2.78
	Perception of student toward their mathematics teacher	0	0	0	0	0	0
37	My teachers have been interested in my progress in math	50	37	26	46	23	3.25
38	I would talk to my math teachers about a career that uses math.	45	48	32	28	29	3.29

39	My teachers have encouraged me to study more maths.	35	57	35	41	14	3.32
40	My teachers want me to take the entire math I can.	30	53	30	36	33	3.06
41	Math teachers have made me feel I have the ability to go on in mathematics.	64	17	26	20	55	3.08
42	My teachers think I'm the kind of person who could do well in math.	57	36	17	27	45	3.18
43	Getting a teacher to take me seriously in math is a problem.	16	24	45	54	43	2.54
44	It's hard to get math teachers to respect me.	43	22	32	29	56	2.82
45	I have a hard time getting teachers to seriously with me about math.	21	28	40	57	36	2.68
46	My teachers think advanced math will be a waste of time for me.	39	19	14	58	52	2.64
47	I feel that math teachers ignore me when I try to talk about something serious.	17	24	33	48	60	2.4
48	My teachers would not take me seriously If I told them I was interested in a career in science and mathematics.	20	39	28	58	37	2.71

Total mean score=2.94

Appendix-H

Comparison Between the Attitude of Boys and Girl Students Toward Mathematics at Basic Level.

Comparison	Sample Size	Mean	Standard Deviation	d.f.	t-value	Conclusion
Boys	182	3.94	0.76	357	0.17	<1.96 Not Significance
Girls	177	3.96	0.77			

$$t_{0.05,357}=1.96$$

For (N_1+N_2-2) degree of freedom

Appendix-I

Sample school and sample students

S.N	Name of school	Students of clsss-8	Boys	Girls
1	Shree Kalika Lower Secondary School, Khalte	31	17	14
2	Shree Chautara Secondary School , Semjung	45	22	23
3	Shree Balmanhir ,Neelkantha	58	27	31
4	Shree Pashupati Secondary School,Neelkantha	38	20	18
5	Shree Pida HSS, Pida	65	32	33
6	Dhading Boarding HSS, Nilkantha	42	22	20
7	Adarsa Boarding School	52	27	25
8	Advance Acedemy ,Nilkantha	28	15	13
	Total	359	182	177

Appendix-I

Statistical Techniques used for the study

The researcher had applied the following statistical techniques to verify the hypothesis and then analyze attitude of students towards mathematics

1. The statistical device χ^2 -test was applied to find the opinion of all students towards mathematics at basic level. The formula was used for calculation of χ^2 -test is.

$$\chi^2 = \frac{\sum [f_o - f_e]^2}{f_e}$$

Where,

f_o = observed frequency

f_e = Expected frequency

2. The statistical device t-test was applied to find the comparisons the attitude of boys and girls towards mathematics at basic level. The formulas was used for calculation t-test is.

$$t = \frac{\bar{X}_1 - \bar{X}_2}{S_p \left(\frac{1}{N_1} + \frac{1}{N_2} \right)}, \quad S_p^2 = \frac{(N_1 - 1) S_1^2 + (N_2 - 1) S_2^2}{N_1 + N_2 - 2}$$

Where,

Degree of freedom = $N_1 + N_2 - 2$

\bar{X}_1 = Mean score of boy's students

\bar{X}_2 = Mean score of girl's students

N_1 = Number of boys students

N_2 = Number of girls students

S_1 = Variance of boy's students

S_2 = Variance of girl's students

Appendix-J

Interview guideline for the mathematics teacher

Name:

Address:

Sex:

Qualification:

Experience:

The interview with the teacher was taken on the basis of following guidelines:

- Students attitude towards mathematics
- Students' achievement in math
- Homework
- Guardian support

Etc.