Chapter I

INTRODUCTION

Background of the Study

Mathematics has played a very important role in building up modern civilization for perfecting all sciences. It has continuously been developed and changed with changing needs of the contemporary society. Mathematics is used in every field of social science and other sciences. The individual, community, association, organization, institution and governments use mathematics in their own ways. Mathematics knowledge is applicable in every aspect of individual life, social works, economics, politics etc. It is like a heart in human life.

Mathematics has been accepted as an important component of formal education from ancient period to the present day. Nowadays every human discipline is interpreted in mathematical models. Therefore, there is a definite need of mathematics to the every body's daily life and also for the base of further studies. In the field of education at school level, the whole achievement of a student's significantly depends upon his /her mathematical achievement. And motivation plays an important role in mathematical achievement of any students.

Mathematics has become so wider that it has been an inseparable subject in almost all the streams. Mathematics knowledge and skills are widely practicable not only in science and technology but also in other language. Thus, it occupies significant place, in school level education. The National Education System Plan (NESP-2028-2032) has stated the importance of mathematics as described below.

Mathematics, like a language is a basic tool of communication. Daily transactions and communications are involved the frequent use of mathematical concept. Thus it is quite natural that mathematics is given a very important place in school level education.

Mathematic is essential for everyday life as for higher study in the field of science and technology. Mathematics educators are the troubled because many students have got wrong impression about mathematics and dislike novel activities in mathematics. The worst is that many students are afraid of mathematics and consequently hate it.

In the context of Nepal, mathematics was given a significant place, second value as language at all level of school education. An effective teaching procedure based upon the principle of psychology was adopted. People seemed not to acquire original thinking and problem solving attitude instead a habit of rote learning, using unfair means in examination etc. were developed to students.

An attitude is the way of person's thinking or behavior in a particular situation. The feeling tones that accompany each experience constitute the quality component out of which attitude are constructed. When an individual is stimulated by an idea and activity or another person, she/he makes certain responses in the form of approval or disapproval characteristic of the person form her/his attitude.

Attitudes are of two types: positive attitude and negative attitude. A positive attitude implies that the behavior organized bringing the person into closer contact a prolonged experience with the object of the attitude. That is one would say that a positive attitude involves approach tendencies towards its objects. In the similar way negative attitude involves escape or avoidance tendencies towards objects.

It is necessary to describe here about the development of attitude more over how attitude develop from birth to adulthood. For the development of attitude, given factors are responsible Parental influence, Peer influence, Information influence, Education influence and Teacher influence.

There could be many factors that influence the students attitude towards mathematics (Hann, 2002) claimed that the students attitudes as well as understanding of mathematics influence the pupils attitude and pupil's achievement. He further states that the large number of teachers who dislike or fear of mathematics has become a factor in children's attitudes towards subject.

The history of mathematics education in Nepal begins since the Vedic period (earlier than 3000 BC). Rig-Veda among the four Vedas treats mathematics. In the early days, Hindu education was devoted to develop a sense of respect towards senior in students and Buddhist education was provided to those who were interested to become Lamas. The main subjects taught at that period were LIPI or Lekha (alphabets, reading and writing), Rupa (drawing) and Ganana (arithmetics). With the establishment of Darbar school on 27th Ashwin 1910 B.S. by the Prime Minister Jang Bahadur Rana after his return from Londan, Darbar school provided only the primary level education (grade I to V) following syllabus containing ganit, writing, poetry and fiction and other books. Generally, public also got access in Durbar high school after it shifted to Rani Pokhari. During the Devshamser, many and more schools were established and mathematics occupied the important status in the syllabus at that time. The course of 'Shretapathsala' had also included simple and general mathematics in it. After the establishments of School Leaving Certificate (SLC) Examination Board in 1990 B.S., the school curriculum was first introduced. The first curriculum

included various seven chapters in 800 full marks. Compulsory mathematics along with additional mathematics each of 100 full marks.

There were occasional studies in the decades of the 1960s and 1970s, conduced mainly by attitude research, that either directly or indirectly addressed teacher's beliefs and conceptions. Since 1980, however many studies in mathematics education have focused on teacher's beliefs about mathematics and mathematics teaching and learning. For the most part, these researcher have worked from the premise that understand teaching from teacher's perspective we have to understand the beliefs with which they define their work.

Students do not just learn methods in mathematics classrooms, they learn to be mathematics learner and their learning of content knowledge cannot be separated from their interactional engagement in the classroom, and the two mutually, constitute one, another at the time of learning (Boaler, 1999)

Learning mathematics involves, acquiring more that knowledge about mathematics skills and content. Mathematics learners also develop personal knowledge broader than specific mathematical concepts or procedures. Mathematics education use the term "beliefs" to encompass this realm of person knowledge.

Beliefs research may be taken up by mathematics educators who adopt either a psychological perspective or anthropological perspective; both perspectives provide insight on how individuals process information, while each provide different perspectives on whether and how the emphasis is on cultural information or processing of information.

Student's attitudes and the belief towards mathematics affected by so many factors like own, parents, peers, teachers, school/college, culture, ethics, society etc.

In this study researcher wanted to study about private and public school's student's attitude towards secondary school mathematics. More over this study was investigated attitude and belief of private and public school's students regarding values and enjoyment of mathematic.

Statement of the Problem

This study was concerned with the study of attitude towards mathematics of private and public school's student's regarding the value and enjoyment. Attitude towards mathematics play deceive role in learning and teaching mathematics. Attitude formations are also important factors which pay vital role in attitude formation towards subject. In the field of mathematics education, research on attitude has been motivated by the belief that 'Something called "attitude" plays a crucial role in learning mathematics'. Thus the study intends to answer the following questions.

i.   Do the private and public school's students have the same attitude and belief towards the secondary school mathematics?

ii.   Do the private and public school's students have the different attitude and belief towards the secondary school mathematics?

Objective of the Study

There are many factors and so many thing that form the attitude towards subject and so many factors that separate attitude of private and public school's students towards mathematics. The objectives of this study are as follows.

⟩ To determine the attitude and belief towards secondary school mathematics of private and public school's students.

) To compare the private and public school's students attitude and belief towards the secondary school mathematics.

Significance of the Study

This study was concerned with the attitude towards mathematics of private and public school's student's of Ramechhap District. In this study researcher wanted to study about the students attitude towards mathematics. More over this study investigated the significant difference between mathematics regarding values and enjoyment of mathematics. The main significance of this study was categorized in to the following points.

) It's finding helped to improve the mathematics achievement of private and public school's students.

) It's finding was helpful to mathematics teacher in class while teaching mathematics.

) It's finding was helpful to the curriculum designer while designing the mathematics curriculum and other stake holders related to education.

) This study was helpful to open the doors for the further study of attitude towards mathematics regarding many things.

Delimitations of the Study

This study is conducted in Ramechhap of grade X students of private and public secondary school.

) This study is conducted only in secondary school of Ramechhap District.

) The study is limited to ten schools in which five private and five public school was involved.

) The study is conducted only on grade X students of secondary school.

) This study is conducted only in the mathematics subject at grade X.

Statement of the Research Hypothesis

The following are the sets of hypotheses of this study.

) There is positive attitude and beliefs of private school's students towards secondary level mathematics

) There is negative attitudes and beliefs of public school's students towards secondary level mathematics

) There is significance different in attitudes and beliefs towards secondary mathematics between private and public school's students.

Statistical Hypothesis

**Null Hypothesis (H_o)*:* There is no significant difference between the attitude and belief of public and private school's students towards the secondary level mathematics. (H_o: $\Uparrow_1 = \Uparrow_2$)

Alter Native Hypothesis (H_1): There is significant difference between the attitude and belief of public and private school's students towards the secondary mathematics. (H_1: $\Uparrow_1 \mid \Uparrow_2$)

Definition of the Related Terms

Attitude

Thinking or feeling about something and a feeling or opinion about something.

Belief

Trust, faith or confidence and something believed is called belief.

Students Belief

Opinions or feelings of secondary level students towards somebody or something.

Positive Attitude

Positive attitude is a positive emotional disposition towards the subject.

Private School

The school which is established from private ownership and managing for all physical and economical factors depend owns self.

Public School

The school which is established from the government, conducted under national educational policies and depends upon government and non government organizations.

Student

A person who is studying mathematics in private and public secondary school of Ramechhap district.

Chapter II

REVIEW OF RELATED LITERATURE

This chapter is devoted to the discussion of related literature. There are many studies about the attitude and belief in teaching learning process in which some of them are related to teacher, parents and students in different class level. However, some studies have been done to explore whether the achievement in mathematics is affected by the variables such as class size, gender difference, teachers' qualification, teaching with and without instructional materials etc. Here, the researcher aims to investigate the attitudes of private and public school's students towards secondary school mathematics. Some of the studies related to this area are listed as below.

Khadka, (2006) did a study on the title "Factor Influence the Attitudes Towards the Learning Mathematics to the Children of Ex-Kamalyas." The objectives of the study were to find out the factor influencing the attitude towards learning mathematics to the children of Ex-Kamalyas in Kailali district and to find out liking and disliking factors of mathematics to the focused group. Interview and observation are applied together to collect the data. The study has concluded that school physical condition, socio-economic status of Ex-Kamalyas teachers attribution and expectation, usefulness of mathematics mechanism distribution of incentives, average of focused children, parent low involvement in education found that most influencing attitudes in learning mathematics. Similarly low family income trend of tuition, trend of grace mark system, untrained teacher and non-experienced teachers, high gap between the school and community relation.

Plehkonen (1996), agree that belief's does not suitable in the human affective domain but somewhere between the cognitive and affective domains, in what he calls the "twilight zone", as he argues that beliefs have a component in both domains'. And he also agree that beliefs are a part of person's knowledge that is highly subjective and on the other hand the conceptions feeling and beliefs are often overlapping and cannot be distinguished.

Kirsti, (2005) did a study on the topic "Students Beliefs and Attitudes Towards Mathematics" In this study some preliminary results from research carried out in Norway in 2005 are given, which focus on first years students in upper secondary school. The answer from the ninth grade students in 2005. In this study she used a questionnaire as a tool.

She concluded that, we have an idea that a positive attitude towards mathematics and the teaching of the subject lead in general to the motivation of students to learn more and conversely, high performance in mathematics, combined with the experience that one achieve well in the subject, lead to positive attitude towards mathematics.

Ministry of Education (MOE) had published the primary education curriculum in 2010 B.S. All Round National Education committee 2018 B.S. had included compulsory mathematics as well as optional mathematics in the arts and science schools. NESP-2028 B.S. brought out the curriculum in which compulsory mathematics and optional mathematics occupied their earlier position in general schools but in vocational and Sanskrit schools, there were no rooms for optional mathematics. Mathematics had been taught as a compulsory subject at all the levels of school education in Nepal.

Stephen and Leonie, (1998) did a study on the topic "Students Attitudes Towards Mathematics in Single-sex and Coeducational Schools. This examines students attitudes towards mathematics at the secondary school level. The attitudes of boys and girls in grade 8 to 12 in four schools were compared: a single-sex boys and a single-sex girl's private school and a private co-educational. This study was an exploration of how students' attitudes varied according to grade, sex and educational setting. They concluded that, there were no difference between students in the two in the two coeducational schools, in general students attitudes were found to be less positive in more senior grades, overall boys had more positive attitudes than girls.

Adhikari, (2011) did a study entitled "A study on the attitude of teachers' and students' towards parallel question paper of mathematic in SLC examination". The objectives of this study was to study the attitude of teachers students towards parallel question papers of mathematics in SLC examination. The study was conduct in Lamjung districts. Sample teacher and students were selected from 5 secondary schools and 10 higher secondary schools of research area. Two different opinionnaires were adopted as the instrument to generate data for this study. He conclude that positive attitude of higher secondary level students and teachers, positive attitude of secondary level students and teacher the higher secondary level students had the better attitude than those of teachers' attitude toward parallel questions and students and teacher's attitude were significantly different.

Gautam, (2012), did a study entitled "Impact of students belief on the achievement of mathematics at secondary level". The main objective of this study is to compare beliefs towards mathematics between boys and girls and comparison between rural and urban students on belief towards secondary school mathematics.

For this study he has been developed questionnaire which was developed and tested by peter op't Eynde and Erik De corte. The $\aleph^2$-test, correlation coefficient and t-test were used as statistical tools for the analysis of data of 0.05 level of significance. He conclude that the students hold strong beliefs that the teachers play a major role in contributing to their interest in mathematic. The study with the findings can also conclude that the difference in mean scores of boys students and girls students was insignificant. But students beliefs and their mathematics achievement has significant relationship.

Poudel (2009) did a study entitled "Correlation Study Between Beliefs and Mathematics Achievement of Students of Grade–IX". The main objective of this study was to identify student's beliefs about mathematics as well as comparison of students' beliefs of public school and private school and also investigates the relationship between students' beliefs and mathematics achievement of grade IX. He has used questionnaire tool to fulfill his objectives. The mean, percentage, standard deviation, correlation coefficient, $\aleph^2$-test, two tailed t-test and r-test was used as statistical tool for the analysis of data of 0.05 level of significance. Finally he concluded that there is no significance different between public and private school student's beliefs and there is no significance relationship between students' beliefs and mathematics achievement.

Pandit (1980) did a study entitled "Attitude of secondary school students and their parent towards mathematics and other subject of instructions" and finds that, both the students and their parents ranked mathematics the highest on most of the attitude statements, no grade wise variation in student's attitudes towards mathematics, the coefficient correlation between parents and students is significant.

He used four-point scale to covert the ranks into numerical values, measuring this attitude and he also used Yearge Levin's attitude scales.

Tiwari (2002) did a study entitled "A study of attitude of farmer and non-farmer parents towards the school mathematics." The main objective of this study is to find the attitudes towards school mathematics of farmer and non-farmer parents. For this study he has been developed two types of opinionnaire. Likert technique was adopted for the scoring of each statement. To find the attitude of farmer and non-farmer parents, $\mathfrak{R}^2$-test was adopted and for comparison of farmer and non-farmer parents attitude towards the school mathematics, t-test was adopted.

Finally he concluded that both the farmer and non farmer parents has positive attitude towards the school mathematics but score of attitude of non-farmer parents has higher scores of attitude than farmer parents.

Literature reviews in attitude and belief of different groups of people about different topics was studied. Many researches were conducted in different fields of mathematics. The attitude and belief towards mathematics from private and public school students at grade-X in Ramechhap district was not adequately explored. The researcher found that no research has been done to find out the attitude and belief towards the mathematics. Therefore, this study focused on the attitude and belief towards the mathematics from private and public school students at grade-X. It would be useful for those people who would be interested in this domain.

Conceptual Framework

From the above related review of the study the researcher came to conclude that there were main possible influencing factors of Attitude of students towards the Mathematics.

Fig.1: Conceptual Framework
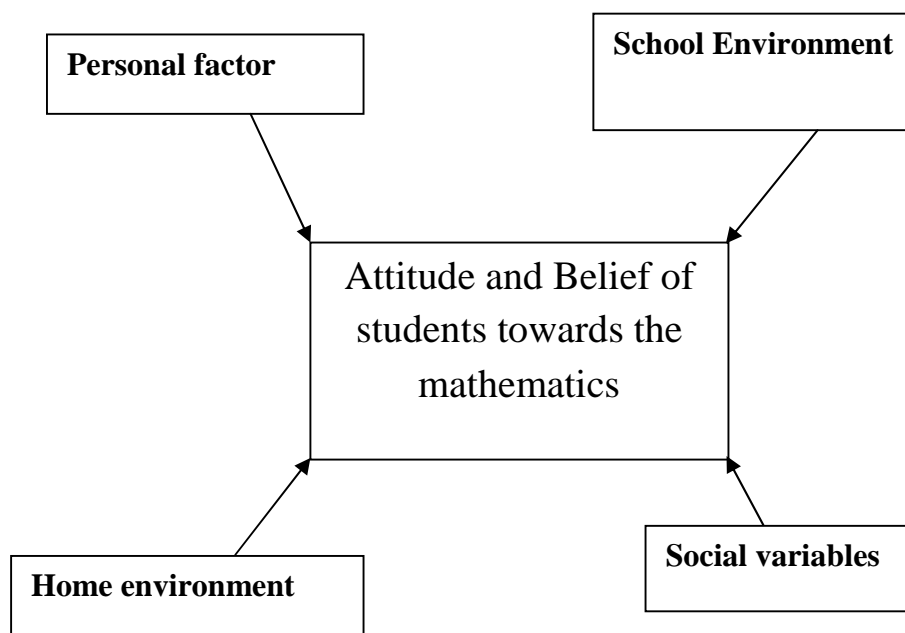
As discussed above related literature, attitude and beliefs of students towards mathematics may depend upon different variables. Generally, Attitude and Belief of students towards the mathematics is influenced from Personal factor, School Environment, Home Environment and Social Variables.

In the study, the variable related to Personal factor consists of prior knowledge, attitude and interest. School environment consists of classroom management, teacher-student interaction, sitting management and experienced and non-experienced teachers. Home environment consists of parental support, parents education for children at home. Social Variable is also non separable and important factor in mathematics at secondary level. This includes social system, culture customs and traditional effects in the society. The physical facilities, students' number in classroom, gender bias and are considerable elements for doing better or worse in mathematics at secondary level.

Chapter III

METHODS AND PROCEDURES

This chapter explains the methodology which was used to conduct research and techniques applies to analyze the data based on the information. More over this study was based on quantitative approach so that the study is considered as survey of private and public secondary school's students attitude and belief towards mathematic. It contains some sub-topic such as Design population, sample, tools, validation of tools, procedure of data collection of data, analysis and interpretation of data.

Research Design of the Study

This study was based on survey design. Thus, the present study is more quantitative but some qualitative aspects are also added to analyze the attitude and belief towards mathematics from private and public school students

Population of Study

The population of the study consisted of 4247 students of public and private school of secondary level at grade X in academic year 2071/72 in Ramechhap district.

Sample of the Study

The sample of the study was determined by stratified random sampling. There are 102 secondary schools in Ramechhap district. Among them, five private schools and five public schools were selected for the sample of the study. The total number of sampled students were 120 students out of which 60 were from public and 60 from private.

Tools Used in the Study

Opinionnaire

In order to meet the research objectives, mathematics attitude and beliefs opinionnaire was used on the study of "Students Attitude and Belief Toward Mathematics from Private and Public School Students". Basically the questionnaire consists of two dimensions to represent two facts in students attitude and beliefs. The dimensions included thinking about the mathematics and feeling about the mathematics, where thinking is related to students attitudes about mathematics and feeling is related to students belief about mathematics. The opinionnaire related to attitudes and beliefs is developed for Instructional psychology and Technology.

For this study, the researcher used 40 positive and negative statement on mathematics attitude belief scale on mathematics attitude and belief scale. The opinionnaire contained 10 positive and 10 negatives related with attitude and 10 positive and 10 negative related with beliefs about secondary school mathematics.

Observation Form

To identify the student's attitude and belief about mathematics the researcher observed one mathematics class and collected required data. The researcher observation was based on the theoretical framework. The observation form was taken from H.L. Gautam (2007). Also it was taken from "Mathematics is Important but Boring: Students Beliefs and Attitudes towards mathematics".

Reliability and Validity of Instruments

Reliability and validity of the research instruments are the necessary qualities of instrument. For the purpose of reliability of achievement test, pilot test was used .

The average time taken by the students to complete the items was 60 minutes. The number of tested students in the school was 70.

Data Collection Procedure

The researcher visited the each sample school of Ramechhap district for data collection with the help of principals and mathematics teacher of each school. Researcher explained the detail purpose of the study to visit and appointment to visit the school for next day. The tool for the study consisted twenty positive and twenty negative statement. The research explained the answering procedure to the students. After some time research was completed to the expected sample area and collected all respondents opinionnaire sheets and score himself according as Likert five points scale.

Scoring Procedures

The scoring procedure of each statement was as follows:

There are one set of opinionnaire having 20 statements with rating scales for the given statements. Strongly agree, agree, undecided, disagree and strongly disagree with rating 5,4,3,2 and 1 respectively in each statements. From pilot study, those statements towards which all students had responded on the same scale were discarded and remaining statements were included in the opinionnaire.

Meaning of Ratings	Rating
Strongly agree (S.A.)	5
Agree (A)	4
Undecided (U)	3
Disagree (D.A.)	2
Strongly disagree (S.D.)	1

Table for each negative statement

Meaning of Ratings	Rating
Strongly agree (S.A.)	1
Agree (A)	2
Undecided (U)	3
Disagree (D.A.)	4
Strongly disagree (S.D.)	5

Data Analysis

First of all, the researcher collected all the tool's answer sheets of students with the help of score of each statement. The research find out mean, standard deviation and t-value and analyzed the data systematically by using mean, standard deviation, t-value etc. To compare opinion of public and private school's students researcher used t-test at 0.05 level of significance. The researcher used $\mathfrak{R}^2$-test to test the attitude and belief of private school's students toward secondary schools mathematics and

similarly for the public school's student's and researcher used t-test to compare the attitude of public and private students towards the secondary school mathematics and for the last objectives, researcher analyzed by using descriptive method according to the class observation of students of private and public school.

Chapter IV

ANALYSIS AND INTERPRETATION

This chapter deals with an analysis of the data obtained from the surveys with their interpretations. This analysis included the mean score from each survey question, the standard deviation, t-test and $\Re^2$-values and the answer to the research questionnaire. The data were collected for this study form the Ramechhap district. The collected data were tabulated and analyzed to obtain objectives and verify the hypothesis as stated in chapter I.

The collected data was used to analysis under the following headings. Which correspond to the objectives of the study

a) To determine the attitude and belief towards secondary school mathematics of private and public school students'

b) To compare the private and public school students' attitude and belief towards the secondary school mathematics

Analysis of Responses

Some questionnaires related to attitude scale were distributed in all private and public schools with 20 items/statements questionnaire. Statements were in positive or negative nature related to the selection of mathematics. The respondents were requested to put a tick ( ) marks in chosen column because there were 5 column after each statement. After the computation of the response of students, the following result was found.

According to Sukhia, Mahrotra & Mahrotra (1983), there are two ways for the analysis of responses. The simplest way is to distribute but not measure opinion by indicating the percentage of responses of each item. But in the study investigator adopted second way of analysis in which the actual Likert scaling technique provides a five point scale and assigns each of the five positive scale values. For all

favorable statements procedures were from maximum to minimum 5,4,3,2,1 and for all unfavorable from minimum to maximum 1,2,3,4,5. The five positive responses were from maximum to minimum: Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D), and Strongly Disagree (SD).

Item Wise Analysis of Responses

The actual number of responses and their interpretation in percentage in respect of each item of attitude scale are explained below:

1. In the statement no-1, 20 (16.67%) respondents responded strongly agree (SA), 38 (31.67%) agree (A), 28 (23.32%) Undecided (U), 14 (11.67%) disagree (D), and 20 (16.67%) strongly disagree (SD). In which 58 (48.34%) responses were in favor of the statement, 34 (28.34%) against and 28 (23.32%) undecided of the statement.

2. In the statement no-2, 24 (20%) respondents responded strongly agree (SA), 40 (33.34%) agree (A), 24 (20%) Undecided (U), 22 (18.33%) disagree (D), and 10 (8.34%) strongly disagree (SD). In which 64 (53.34%) responses were in favor of the statement, 32 (26.67%) against and 24 (20%) undecided of the statement.

3. In the statement no-3, 16 (13.33%) respondents responded strongly agree (SA), 40 (33.34%) agree (A), 32 (26.67%) Undecided (U), 26 (21.67%) disagree (D), and 6 (5%) strongly disagree (SD). In which 56 (46.67%) responses were in favor of the statement, 32 (26.67%) against and 32 (26.67%) undecided of the statement.

4. In the statement no-4, Strongly agree (SA) 32 (26.67%), agree (A) 22 (18.33%), undecided (U) 28 (23.33%), disagree (D) 20 (16.67%), strongly disagree (SD) 18 (15%) in which 54 (47%) respondents were favor, 38 (31.67%) against and 28 (23.33%) undecided of the statements no-4.

5. In the statement no-5, Strongly agree (SA) 26 (21.67%), agree (A) 26 (21.67%), undecided (U) 28 (23.33%), disagree (D) 24 (20%) and strongly disagree (SD) 16 (13.33%) in which 52 (43.34%) respondents were favor, 40 (33.33%) against and 28 (23.33%) undecided of the statements no-5.

6. In the statement no-6, Strongly agree (SA) 24 (20%), agree (A) 16 (13.33%), undecided (U) 34 (28.33%), disagree (D) 26 (21.67%) and strongly disagree (SD) 20 (16.67%) in which 40 (33.33%) respondents were favors, 46 (38.34%) against and 34 (28.33%) undecided of the statements no-6.

7. In the statement no-7, strongly agree (SA) 8 (6.67%), agree (A) 24 (20%), undecided (U) 24 (26.67%), disagree (D) 40 (33.33%) and strongly agree (SD) 16 (13.33%) in which 36 (26.67%) respondents were favors, 56 (46.67%) against and 32 (26.67%) undecided of the statements no-7.

8. In the statement no-8, Strongly agree (SA) 16 (13.33%), agree (A) 20 (16.67%), undecided (U) 46 (38.33%), disagree (D) 20 (16.67%) and strongly disagree (SD) 18 (15%) in which 36 (30%) respondents were favors, 38 (31.67%) against and 46 (38.33%) undecided of the statements no-8.

9. In the statement no-9, Strongly agree (SA) 12 (10%), agree (A) 42 (35%), undecided (U) 26 (21.67%), disagree (D) 30 (25%) and strongly disagree (SD)

10 (8.33%) in which 54 (47%) respondents were favors, 40 (33.33%) against and 26 (21.67%) undecided of the statements no-9.

10. In the statement no-10, Strongly agree (SA) 16 (13.33%), agree (A) 14 (11.67%), undecided (U) 36 (30%), disagree (D) 26 (21.67%) and strongly disagree (SD) 28 (23.33%) in which 30 (25%) respondents were favors, 54 (45%) against and 36 (30%) undecided of the statements no-10.

11. In the statement no-11, researcher found that strongly agree (SA) 6 (5%), agree (A) 28 (23.33%), undecided (U) 36 (30%), disagree (D) 34 (28.33%) and strongly disagree (SD) 16 (13.33%) in which 34 (28.33%) respondents were favors, 70 (41.67%) against and 36 (30%) undecided of the statements no-11.

12. In the statement no-12, Strongly agree (SA) 10 (8.33%), agree (A) 24 (20%), undecided (U) 28 (23.33%), disagree (D) 36 (30%) and strongly disagree (SD) 22 (18.33%) in which 34 (28.33%) respondents were favors, 58 (48.33%) against and 28 (23.33%) undecided of the statements no-12.

13. In the statement no-13, Strongly agree (SA) 12 (10%), agree (A) 32 (26.67%), undecided (U) 32 (26.67%), disagree (D) 24 (20%) and strongly disagree (SD) 20 (16.67%) in which 44 (36.67%) respondents were favors, 44 (36.67%) against and 32 (26.67%) undecided of the statements no-13.

14. In the statement no-14, Strongly agree (SA) 22 (18.33%), agree (A) 16 (13.33%), undecided (U) 48 (40%), disagree (D) 16 (13.33%) and strongly disagree SD 18 (15%) in which 38 (31.66%) respondents were favors, 34 (28.33%) against and 48 (40%) undecided of the statement no-14.

15. In the statement no-15, Strongly agree (SA) 16 (13.33%), agree (A) 30 (25%), undecided (U) 50 (41.67%), disagree (D) 16 (13.33%) and strongly disagree (SD) 20 (16.67%) in which 46 (38.33%) respondents were favors, 36 (25%) against and 50 (41.67%) undecided of the statements no-15.

16. In the statement no-16, Strongly agree (SA) 6 (5%), agree (A) 24 (20%), undecided (U) 32 (26.67%), disagree (D) 40 (33.33%) and strongly disagree (SD) 18 (15%) in which 30 (25%) respondents were favors, 58 (48.33%) against and 32 (26.67%) undecided of the statements no-16.

17. In the statement no-17, Strongly agree (SA) 6 (5%), agree (A) 26 (2167%), undecided (U) 28 (23.33%), disagree (D) 44 (36.67%) and strongly disagree (SD) 16 (13.33%) in which 32 (26.67%) respondents were favors, 60 (50%) against and 28 (23.33%) undecided of the statements no-17.

18. In the statement no-18, Strongly agree (SA) 12 (10%), agree (A) 30 (25%), undecided (U) 36 (30%), disagree (D) 26 (21.67%) and strongly disagree (SD) 16 (13.33%) in which 42 (35%) respondents were favors, 42 (35%) against and 36 (30%) undecided of the statements no-18.

19. In the statement no-19, Strongly agree (SA) 16 (13.33%), agree (A) 22 (18.33%), undecided (U) 28 (23.33%), disagree (D) 36 (30%) and strongly disagree (SD) 18 (15%) in which 38 (31.66%) respondents were favors, 54 (45%) against and 36 (23.33%) undecided of the statements no-19.

20. In the statement no-20, Strongly agree (SA) 16 (13.33%), agree (A) 6 (5%), undecided (U) 22 (18.33%), disagree (D) 28 (23.33%) and strongly disagree

(SD) 48 (40%) in which 22 (18.33%) respondents were favors, 76 (63.33%) against and 22 (18.33%) undecided of the statements no-20.

Attitude and Belief of Students Towards Secondary School Mathematics

The first objective of the study was to find out the attitude and belief of secondary level students towards the selection of mathematics at grade-X. In order to achieve this objective, χ^2-value of 20 statements at 0.05 level of significance have been analyzed which are tabulated in the following table.

Table-1

χ^2-values of statements of attitude and belief scale of students (see app-vi)

S.N.	Statements	χ^2-value	Decision
1	Guardians have positive attitude towards you while selecting mathematics.	13.89	S
2	Mathematics is helpful in scoring higher marks in the exam.	19.03	S
3	The selection of mathematics subject makes a smart and distinct to themselves in front of their friends.	16.24	S
4	To take mathematics, one should have a strong foundation in mathematics.	19.81	S

5	Mathematics provides us with knowledge useful in daily life.	7.96	NS
6	Mathematics helps for further study.	8.35	NS
7	Guardians should help you to study at home.	12.31	S
8	Guardian should provide extra money while taking extra-classes.	9.24	NS
9	Mathematics is better than other optional subjects.	16.27	S
10	Students select mathematics due to the pressure of guardian and teachers.	10.65	S
11	Mathematics is sufficient to select better education for study in higher education.	8.63	NS
12	You are unsatisfied while selecting mathematics rather than other optional subjects.	6.13	NS
13	You are satisfied by getting earlier students, parents, guardians and teachers in choosing of mathematics.	2.81	NS
14	The guardians, teachers play vital role in selection of mathematics.	18.67	S
15	The family background affects while choosing the	15.14	S

	mathematics.		
16	Your guardians help you while doing the homework.	12.03	S
17	Economic background affects while studying mathematics.	17.09	S
18	Guardians' education should affect while selecting mathematics.	2.41	NS
19	The parents' and teachers' attitude and behavior towards the students' play a role in selecting of mathematics.	4.6	NS
20	Mathematics is an easy subject.	64.58	S

We can use the equation Chi-square = the sum of all the $(f_0 - f_e)^2 / f_e$

$$\Re^2 = \phi \ \frac{(f_0 - f_e)^2}{f_e}$$

Here, f0 denotes the frequency of the observed data and fe is the frequency of the expected value.

And to calculate the expected value, the following table is shown as an example.

	Category I	Category II	Category III	Row Total
Sample A	a	b	c	a + b + c
Sample B	d	e	f	d + e + f
Sample c	g	h	i	g + h + i
Column Total	a + d + g	b + e + f	c + f + i	a + b + c + d + e + f + g + h + I = N

Now we need to calculate expected value and we can do this by using the row total times the column divided by the guard total (N). For example, for cell 'a' the expected value would be (a + b + c) (c + d + g)/N.

Once the expected value would be calculated for each cell, we can use the following procedure to calculate chi-square.

Observed	Expected	(0-E)	$(0 - E)^2$	$(0 - E)^2/E$

Where,

$$\mathfrak{R}^2 = (0 - E)^2/E$$

The result of table-1 shows that the ²-value of 12 statements out of 20 statements were significant at 0.05 levels of the significance and 8 statements out of 20 statements were not significant at 0.05 level of the significance. It showed that the secondary level (grade-X) students had positive attitude towards mathematics.

From the table, the statement no 20 ('Mathematics is easy object') with ² value 64.58 is highly significant at 0.05 level. Similarly, the second highly significance statement 'to take mathematics, one should have a strong foundation in mathematics' with ²-value 19.81 at 0.05 level of significance.

The last insignificant statement 'Guardians' education should affect while selecting mathematics' showed that the majority of the students expressed their negative view about this statement. So, it indicates that the guardian education affects in the selection of mathematics.

Comparison of Private and Public School Students Attitude and Belief Towards the Secondary School Mathematics

The second objective of this study was to compare private and public school students attitudes and beliefs towards the secondary school mathematics. In order to achieve this objective, the following hypothesis was formulated:

Ho: There is no significance different between private and public school student attitude and belief towards the mathematics.

H_o: $\mu_1 = \mu_2$

H_1: There is significance different between private and public school student attitude and belief toward the mathematics.

H_1:μ_1 $|\mu_2$ (The mean score are not same)

To verify this hypothesis, the attitude scores of 5, 4, 3, 2, 1 is provide for rating Strongly agree, agree, undecided, disagree, and strongly disagree.

Also, the calculated values of mean, standard deviation of public and private school student attitude and belief towards the mathematics and t-test are given in the table-2.

Table-2

Comparisons of Public and Private School Students Attitude and Belief in Mathematics

Grouped compared	Sample size	mean	S.D.	t-value	Conclusion
Public	60(N_1)	29.9	35.09	0.16	H_o accepted
Private	60(N_2)	28.9	32.45		

Where

N= sample size, S.D. = standard deviation.

The null hypothesis is accepted if -1.96│ t │1.96 at the table value

$t_{0.05, 58}$ =1.96 (for two tailed test)

The analysis of the information maintained in the above table-3 represents that there were 60 Public and 60 Private students. The mean attitude scores of Public students were 29.9 and their standard deviation was 35.09. Similarly, the mean attitude scores of Private students were 28.9 and their standard deviation was 32.45. The calculated t-value with respect to mean attitude difference of given magnitude was 0.16, which is less than the tabled t-value. Thus the null hypothesis Ho was accepted and alternative hypothesis was rejected. Therefore, the hypothesis that there is no significant difference between public and private school student attitude and belief towards the mathematics is true. Thus it is concluded that there was no

significant difference between public and private school student attitude and belief towards the mathematics is not necessarily false.

Chapter V
SUMMARY, FINDING, CONCLUSION AND RECOMMENDATION

After the analysis and interpretation of the collected data, the design of the study in this concluding chapter attempt had been made to draw conclusions. The first section of this chapter presents summary with finding second section presents the major finding of the study. Third section presents conclusion from the second section. Finally, the last section presents recommendation for the further study.

Summary of the Study

Although mathematics has been given a important place in the school level curriculum it has been one of the subject contributing a huge percentage of failure as reflected by School Leaving Certificate (SLC) examination. It is known what factor impede students progress in these subject. However it is felt that most student dislike mathematics and fear of it. It is also believed that they have no positive attitude and beliefs towards mathematics and, such situation may contributed poor performance in this subject.

The mathematics related attitude and beliefs of students have been found important factors in determining students' achievement in mathematics. This is why this study was undertaken.

The study was done to find out the students attitude and beliefs towards secondary level mathematics from private and public school. For this purpose questionnaire was used as a tool for collecting data. It was taken from "Mathematics Is Important But Boring". Students' Beliefs And Attitudes Towards Mathematics. Which was written by Kristi Kistenko, Barbro Grevholm and Medis Lepik. And also

taken from Center for Instructional Psychology and Technology (CIP&T) which was developed by peter opt Eynde & Erik De Corte (2003).

For the purpose of data collection, the researcher visited all the sample schools and took permission from school authority for the administration of the questionnaire. Then the researcher administrated the questionnaire on the sample of 240 students of eight schools, among them four were private and four were public school by using Likert's five point scale, scores 5, 4, 3, 2 and 1 were allotted to the scale in the favor of strongly agree, agree, neutral, disagree and strongly disagree respectively for the positive sense statement. Scores 1, 2, 3, 4 and 5 were allotted to the scale in the favour of strongly agree, agree, neutral, disagree and strongly disagree respectively for the negative sense statements.

The data collected from questionnaire scores were analyzed by using the following statistical techniques.

1. $\Re^2$ - test was used to test the significance of each attitude statements.

2. $\Re^2$ - test was used to test the significance of each belief statements.

3. Mean and standard deviation was used to compare the attitudes and beliefs of students.

4. t- test was used to test whether the difference of mean attitude and beliefs scores is significant or not.

Major Findings

The analysis of the data collected from questionnaire scores yielded the following results as the findings of the study.

1.   The students of private and public school of grade-X demonstrated positive attitudes towards mathematics.

2.   The students of private and public school demonstrated positive beliefs towards mathematics.

3.   The private and public students had similar attitude and beliefs towards the mathematics.

From the interpretation of the questionnaire it was found that teachers were friendly with students, appreciated the ideas of students in both types of school. It was found that the mathematics teacher highly motivated the students to understand the course and students had greater interest and huge number of students self-confidence in learning mathematics students believed that the role of a teacher was important and had a confidence that they can use what they learn in mathematics in other subjects. But the environment for group work had not been created in the classroom activities specially in public school. From the interpretation, it was found that the students were interested in mathematics and they liked doing mathematics. From the analysis it was found that students believed that anyone can learn mathematics, but they less believed that mathematics can be applied in a social context.

Conclusion

On the basis of the findings, some very significant conclusion drawn for the students beliefs about mathematics. The conclusions are as follows:

1.   There were positive attitudes and beliefs of students of private school.

2.   There were positive attitude and belief of students of public school.

3.   Mean scores of students of public school were higher than the students

of private school.

Recommendations

On the basis of the study, the following recommendations are suggested:

1. This study was done only in the limited sample of the Ramechhap district; the regional and national wise research can be done on similar topic.
2. It is also recommended to carry out the study on an attitude and belief of different groups of people towards mathematics and other subjects.
3. This study had not included mathematics teachers, parents, educators, and campus teacher attitude and belief about the selection of mathematics. Thus the further study is needed in this direction.
4. For generalization of the result of the study, similar study should be done in a wide scope and large sample.

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Confident Scale for the Students

Dear Students,

I am also a students like you. I am going to conduct a study on the topic, "Attitude towards Mathematics of private and public school's student's". This study is a part of the academic requirement of the master's Degree in Education. There is no right and wrong answers. Your valuable repose will be kept confidential and it will be used only for research purpose. Please you are requested to study the statement carefully and give your own opinions to the given statement taking amount of the following indications.

As you read the sentence, you will know whether you agree or disagree. If you strongly agree circle SA. If you agree but not so strongly, or you only sort of agree, circle A. If you disagree with the statement very, circle SD for strongly disagree, if you disagree but not so strongly, circle D. If you are not sure about a question or if you are neutral, circle N.

For the Respondents

Name: ……………………….   Age: ……………………………

School Name: ………………………..   Gender: ……………………….

Grade: …………………………….

Address: …………………………

Confidence Scale:

a)   Positive statement related to attitude:

1. Mathematics is exciting and interesting

2. I never get tired of doing mathematics

3. Mathematics helps me to understand life in general

4. Solving mathematics problem is enjoyable to me

5. Mathematics helps those who make importance decision

6. Good mathematics knowledge makes it easier to learn other subjects

7. I am sure I could do advance work in mathematics

8. mathematics is world wide necessary subject

9. I see mathematics is something when I am out of school

10. I am confident that I can learn mathematics

B. Negative statement related to attitude:

1. Mathematics is boring

2. I feel tired of doing mathematics

3. Mathematics is not important in my life

4. Solving mathematics problem is boring to me

5. Mathematics doesn't help to make important decision

6. Mathematics is not important to learn other subject

7. I don't think I could do advance in mathematics

8. Mathematics subject is not world wide necessary subject.

9. I don't except to use much mathematics when I get out of school

10. I can not show good performance in mathematics

C. Positive statement related to belief:

1. Mathematics is very important.

2. Mathematics is useful for life.

3. It is important to be good at mathematics in school.

4. I need mathematics in order to study what I would like after I finish school.

5. Knowing mathematics will helps to learn.

6. Mathematics teacher helps seriously in mathematics problem.

7. I fell that I have the ability to solve any problem of secondary level mathematics.

8. Secondary level mathematics is useful for everyone.

9. I study mathematics because I know how useful is it.

10. Mathematics is useful for every where.

D. Negative

1. Mathematics is not important.

2. Mathematics unuseful for life.

3. It is not important to be good at mathematics in school.

4. I do not need mathematics in order to study what I would like after I finish school.

5. Knowing mathematics will not help me to learn.

6. Mathematics teacher dose not help seriously in mathematics problem.

7. I don't feel that I have the ability to solve any problem of secondary level mathematics.

8. Secondary mathematics is not useful for everyone.

9. I study mathematics but I don't know where it's use.

10. Mathematics subject is less useful than other subject.

Appendix - II

The Computational Formula Used for Calculation of t^2-test was

$$\Re^2 = \frac{(f_o - f_e)^2}{f_e} \quad \text{with } e(0_{i,j}) = \frac{i^{th} \text{ Row total x } j^{th} \text{ column total}}{\text{Grand total}}$$

Where,

f_o = Observed frequency

f_e = Expected frequency

The computational formula for t - test in comparison of mean scores

$$t = \frac{M_1 - M_2}{\sqrt{\frac{t_1^2}{n_1} \Gamma \frac{t_2^2}{n_2}}}$$

M_1 = Mean of private schools' students attitude and belief score

M_2 = Mean of public schools' students attitude and belief score

n_1 = Number of private schools' students

n_2 = Number of public schools' students.

APPENDIX – III

S.N.	Statements	S.A	A	U	D	S.D
1	Guardians have positive attitude towards you while selecting mathematics.					
2	The student of mathematics is helpful in scoring higher marks in the exam.					
3	The selection of mathematics makes a smart and distinct of themselves in front of their friends.					
4	To take mathematics, one should have a strong foundation in mathematics.					
5	Mathematics provides us with knowledge useful in daily life.					
6	Mathematics helps for further study.					
7	Guardians should have helped you to study in home.					
8	Economic should be provided by guardians while taking extra-classes.					
9	Mathematics is better than other optional subjects.					
10	Students select mathematics due to the pressure of guardian and teachers.					
11	Mathematics is sufficient to select for study better education in higher education.					
12	You are unsatisfied while selecting Mathematics rather					

	than other optional subjects.					
13	You are satisfied by getting earlier students, parents, guardians and teachers in selection of mathematics.					
14	The guardians, teachers play vital role in selection of mathematics.					
15	The family background should effect while choosing the mathematics.					
16	Your guardians help you while doing the homework.					
17	Economics background should effect while studying mathematics.					
18	Guardians' education should effect while selecting mathematics.					
19	The parents' and teachers' attitude and behavior towards the students' play a role in mathematics.					
20	Mathematics is easy subject.					

Thank you very much for your assistance in completing this opinionnaire as well as my research.

Response of Student towards Mathematics

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Total
1	3	4	4	4	2	4	3	4	5	1	5	3	5	5	3	3	4	4	3	4	73
2	4	3	2	4	4	5	2	3	4	2	4	3	4	5	5	3	2	1	1	5	66
3	5	4	3	3	4	3	4	2	2	1	1	5	4	3	3	2	2	4	4	3	62
4	2	1	2	2	1	3	2	3	4	5	3	5	3	4	5	2	2	3	5	1	58
5	3	4	2	4	5	2	3	2	2	4	4	1	1	3	3	2	2	4	4	5	60
6	5	5	4	3	1	2	2	1	4	5	4	5	4	4	3	3	4	5	5	5	74
7	1	1	3	5	5	5	4	4	3	2	2	1	1	5	5	4	2	2	1	1	57
8	4	5	2	1	1	5	4	4	3	3	2	2	4	3	4	3	2	5	2	1	60
9	5	3	4	2	3	5	3	2	1	5	1	3	2	5	3	3	4	5	2	5	66
10	4	5	3	3	2	2	1	3	5	1	1	2	2	5	2	1	5	2	5	1	55
11	2	1	2	1	2	1	1	1	3	3	2	3	1	3	4	2	1	1	2	3	39
12	4	3	4	5	4	3	2	1	2	3	4	5	4	3	2	1	2	3	2	1	58
13	5	4	5	3	4	2	1	3	5	4	2	1	5	3	1	4	1	2	1	5	61
14	4	5	4	1	3	1	3	5	4	2	1	2	2	3	5	4	2	4	5	1	61
15	1	2	4	3	1	3	2	5	1	4	2	3	1	3	4	2	3	1	2	1	48
16	3	2	1	1	2	1	1	3	1	2	2	1	1	3	1	1	2	2	2	1	33
17	4	4	5	5	4	4	5	5	5	5	4	4	3	3	2	2	1	1	2	3	71
18	4	3	2	3	4	3	2	3	4	3	2	3	4	3	2	3	4	5	1	3	61
19	1	2	3	4	5	5	4	3	2	1	1	2	3	4	5	4	4	3	2	1	59
20	3	4	5	4	3	2	3	3	4	5	4	3	2	1	1	2	2	3	2	1	57
21	1	2	3	2	3	2	5	3	4	5	3	4	4	3	5	4	3	3	4	2	65
22	4	4	4	5	5	5	3	3	3	2	2	2	1	1	1	2	2	1	1	2	53
23	3	5	3	5	3	2	2	2	2	2	5	2	5	3	4	5	3	2	5	5	68
24	2	2	1	1	1	1	2	2	3	3	4	5	3	5	3	3	3	3	2	2	51
25	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	60
26	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	3	62

27	3	4	5	2	2	3	4	5	1	2	3	4	5	1	2	3	4	5	3	2	63
28	4	3	2	3	4	3	5	4	3	1	2	2	1	1	2	2	1	1	1	1	46
29	1	1	2	1	2	1	1	1	2	1	3	1	3	1	1	2	1	2	5	2	34
30	4	3	2	3	4	2	3	2	4	2	3	3	4	2	3	1	2	2	2	2	53
31	5	4	3	4	3	4	2	3	3	1	4	1	3	4	3	2	1	3	4	3	60
32	4	5	3	3	3	3	4	2	2	1	3	2	2	2	3	3	3	2	3	4	57
33	4	4	1	3	3	2	2	5	4	3	4	2	1	3	3	2	2	4	5	5	62
34	4	4	5	5	4	3	3	4	4	1	4	2	5	3	4	5	4	4	3	3	74
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36	3	4	5	5	5	5	4	4	4	3	3	2	3	4	4	3	2	1	3	2	69
37	2	5	4	5	5	4	5	4	4	2	3	4	4	3	1	3	2	3	2	2	67
38	5	5	4	4	3	1	2	5	4	4	2	4	3	3	4	1	2	3	4	2	65
39	3	5	4	3	2	1	2	2	2	2	2	1	1	1	3	3	2	3	2	1	45
40	3	4	4	2	5	5	3	3	3	2	1	2	3	4	5	3	3	4	4	1	64
41	2	3	4	5	4	3	2	1	3	3	3	4	5	5	4	4	4	4	3	2	68
42	4	4	5	5	4	3	2	1	2	2	3	2	3	2	3	2	3	4	4	4	62
43	3	2	3	1	2	1	2	3	2	1	2	3	2	4	3	4	3	3	2	2	48
44	4	3	2	1	2	3	4	5	4	3	2	1	2	3	4	5	4	3	2	1	58
45	4	4	5	5	4	4	3	3	3	3	4	4	1	3	4	4	4	2	2	1	67
46	5	5	4	4	3	2	4	3	3	5	4	3	4	5	4	4	3	3	2	1	71
47	4	3	4	5	5	5	3	3	4	3	3	4	4	3	4	3	4	3	4	3	74
48	3	4	3	4	3	5	4	3	2	4	3	3	4	5	3	2	2	2	1	1	61
49	1	2	2	2	2	3	1	3	4	3	3	4	2	2	3	4	5	4	3	3	56
50	3	4	4	5	5	4	4	3	2	2	2	3	3	3	3	2	3	4	3	2	64
51	1	2	3	3	2	2	1	1	2	3	4	1	2	3	4	2	3	4	3	1	47
52	5	5	4	3	5	3	2	5	3	3	5	2	4	5	3	4	5	3	3	1	73
53	3	3	2	2	3	2	2	3	2	3	2	4	3	2	3	3	2	2	3	1	50
54	5	4	3	2	1	1	1	2	1	1	1	2	3	3	2	1	2	1	1	1	38
55	1	3	4	3	3	3	3	2	4	4	3	3	2	2	3	4	3	3	2	3	58

56	3	5	4	4	3	4	3	3	4	4	3	4	3	2	4	2	4	2	4	2	67
57	2	2	3	2	2	3	3	4	5	3	2	2	2	3	4	2	2	2	3	2	53
58	1	1	2	1	4	5	2	1	2	1	3	1	3	1	2	1	1	4	1	1	38
59	4	2	4	2	5	3	3	4	4	3	3	2	2	1	1	3	4	3	4	1	58
60	5	4	3	5	1	5	2	1	3	1	4	1	4	1	1	2	3	5	3	1	55
61	3	4	4	4	2	4	3	4	5	1	5	3	5	5	3	3	4	4	3	4	73
62	4	3	2	4	4	5	2	3	4	2	4	3	4	5	5	3	2	1	1	5	66
63	5	4	3	3	4	3	4	2	2	1	1	5	4	3	3	2	2	4	4	3	62
64	2	1	2	2	1	3	2	3	4	5	3	5	3	4	5	2	2	3	5	1	58
65	3	4	2	4	5	2	3	2	2	4	4	1	1	3	3	2	2	4	4	5	60
66	5	5	4	3	1	2	2	1	4	5	4	5	4	4	3	3	4	5	5	5	74
67	1	1	3	5	5	5	4	4	3	2	2	1	1	5	5	4	2	2	1	1	57
68	4	5	2	1	1	5	4	4	3	3	2	2	4	3	4	3	2	5	2	1	60
69	5	3	4	2	3	5	3	2	1	5	1	3	2	5	3	3	4	5	2	5	66
70	4	5	3	3	2	2	1	3	5	1	1	2	2	5	2	1	5	2	5	1	55
71	2	1	2	1	2	1	1	1	3	3	2	3	1	3	4	2	1	1	2	3	39
72	4	3	4	5	4	3	2	1	2	3	4	5	4	3	2	1	2	3	2	1	58
73	5	4	5	3	4	2	1	3	5	4	2	1	5	3	1	4	1	2	1	5	61
74	4	5	4	1	3	1	3	5	4	2	1	2	2	3	5	4	2	4	5	1	61
75	1	2	4	3	1	3	2	5	1	4	2	3	1	3	4	2	3	1	2	1	48
76	3	2	1	1	2	1	1	3	1	2	2	1	1	3	1	1	2	2	2	1	33
77	4	4	5	5	4	4	5	5	5	5	4	4	3	3	2	2	1	1	2	3	71
78	4	3	2	3	4	3	2	3	4	3	2	3	4	3	2	3	4	5	1	3	61
79	1	2	3	4	5	5	4	3	2	1	1	2	3	4	5	4	4	3	2	1	59
80	3	4	5	4	3	2	3	3	4	5	4	3	2	1	1	2	2	3	2	1	57
81	1	2	3	2	3	2	5	3	4	5	3	4	4	3	5	4	3	3	4	2	65
82	4	4	4	5	5	5	3	3	3	2	2	2	1	1	1	2	2	1	1	2	53
83	3	5	3	5	3	2	2	2	2	2	5	2	5	3	4	5	3	2	5	5	68
84	2	2	1	1	1	1	2	2	3	3	4	5	3	5	3	3	3	3	2	2	51

85	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	60
86	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	3	62
87	3	4	5	2	2	3	4	5	1	2	3	4	5	1	2	3	4	5	3	2	63
88	4	3	2	3	4	3	5	4	3	1	2	2	1	1	2	2	1	1	1	1	46
89	1	1	2	1	2	1	1	1	2	1	3	1	3	1	1	2	1	2	5	2	34
90	4	3	2	3	4	2	3	2	4	2	3	3	4	2	3	1	2	2	2	2	53
91	5	4	3	4	3	4	2	3	3	1	4	1	3	4	3	2	1	3	4	3	60
92	4	5	3	3	3	3	4	2	2	1	3	2	2	2	3	3	3	2	3	4	57
93	4	4	1	3	3	2	2	5	4	3	4	2	1	3	3	2	2	4	5	5	62
94	4	4	5	5	4	3	3	4	4	1	4	2	5	3	4	5	4	4	3	3	74
95	4	4	3	5	5	4	4	3	4	3	3	4	4	2	1	1	1	4	3	3	65
96	3	4	5	5	5	5	4	4	4	3	3	2	3	4	4	3	2	1	3	2	69
97	2	5	4	5	5	4	5	4	4	2	3	4	4	3	1	3	2	3	2	2	67
98	5	5	4	4	3	1	2	5	4	4	2	4	3	3	4	1	2	3	4	2	65
99	3	5	4	3	2	1	2	2	2	2	2	1	1	1	3	3	2	3	2	1	45
100	3	4	4	2	5	5	3	3	3	2	1	2	3	4	5	3	3	4	4	1	64
101	2	3	4	5	4	3	2	1	3	3	3	4	5	5	4	4	4	4	3	2	68
102	4	4	5	5	4	3	2	1	2	2	3	2	3	2	3	2	3	4	4	4	62
103	3	2	3	1	2	1	2	3	2	1	2	3	2	4	3	4	3	3	2	2	48
104	4	3	2	1	2	3	4	5	4	3	2	1	2	3	4	5	4	3	2	1	58
105	4	4	5	5	4	4	3	3	3	3	4	4	1	3	4	4	4	2	2	1	67
106	5	5	4	4	3	2	4	3	3	5	4	3	4	5	4	4	3	3	2	1	71
107	4	3	4	5	5	5	3	3	4	3	3	4	4	3	4	3	4	3	4	3	74
108	3	4	3	4	3	5	4	3	2	4	3	3	4	5	3	2	2	2	1	1	61
109	1	2	2	2	2	3	1	3	4	3	3	4	2	2	3	4	5	4	3	3	56
110	3	4	4	5	5	4	4	3	2	2	2	3	3	3	3	2	3	4	3	2	64
111	1	2	3	3	2	2	1	1	2	3	4	1	2	3	4	2	3	4	3	1	47
112	5	5	4	3	5	3	2	5	3	3	5	2	4	5	3	4	5	3	3	1	73
113	3	3	2	2	3	2	2	3	2	3	2	4	3	2	3	3	2	2	3	1	50

114	5	4	3	2	1	1	1	2	1	1	1	2	3	3	2	1	2	1	1	1	38
115	1	3	4	3	3	3	3	2	4	4	3	3	2	2	3	4	3	3	2	3	58
116	3	5	4	4	3	4	3	3	4	4	3	4	3	2	4	2	4	2	4	2	67
117	2	2	3	2	2	3	3	4	5	3	2	2	2	3	4	2	2	2	3	2	53
118	1	1	2	1	4	5	2	1	2	1	3	1	3	1	2	1	1	4	1	1	38
119	4	2	4	2	5	3	3	4	4	3	3	2	2	1	1	3	4	3	4	1	58
120	5	4	3	5	1	5	2	1	3	1	4	1	4	1	1	2	3	5	3	1	55
	384	406	394	390	382	358	328	356	376	324	334	124	152	368	366	320	322	356	342	254	7056

For statements

SA = 5, A=4, U=3, D=2, SD=1

APPENDIX V

Number of Respondents to the Ranks in each item with $\mathfrak{t}^2$-Value

Students (120)

Item No.	SA(5)	A(4)	U(3)	D(2)	SD(1)	$\mathfrak{R}$-value
1	20	38	28	14	20	13.89
2	24	40	24	22	10	19.03
3	16	40	32	26	6	16.24
4	32	22	28	20	18	19.81
5	26	26	28	24	16	7.96
6	24	16	34	26	20	8.35
7	8	24	32	40	16	12.31
8	16	20	46	20	18	9.24
9	12	42	26	30	10	16.27
10	16	14	36	26	28	10.65
11	6	28	36	34	16	8.63
12	10	24	28	36	22	6.13
13	12	32	32	24	20	2.81
14	22	16	48	16	18	18.67
15	16	30	50	16	20	15.14
16	6	24	32	40	18	12.03
17	6	26	28	44	16	17.09

18	12	30	36	26	16	2.41
19	16	22	28	36	18	4.61
20	16	6	22	28	48	64.58

APPENDIX VI

Item wise Analysis of Responses

Responses											
S.N.	SA	%	A	%	U	%	D	%	SD	%	REMARKS
1	20	16.67	38	31.67	28	23.32	14	11.67	20	16.67	
2	24	20	40	33.34	24	20	22	18.33	10	8.34	
3	16	13.33	40	33.34	32	26.67	26	21.67	6	5	
4	32	26.67	22	18.33	28	23.33	20	16.67	18	15	
5	26	21.67	26	21.67	28	23.33	24	20	16	13.33	
6	24	20	16	13.33	34	28.33	26	21.67	20	16.67	
7	8	6.67	24	20	32	26.33	40	33.33	16	13.33	
8	16	13.33	20	16.67	46	38.33	20	16.67	18	15	
9	12	10	42	35	26	21.67	30	25	10	8.33	
10	16	13.33	14	11.67	36	30	26	21.67	28	23.33	
11	6	5	28	23.33	36	30	34	28.33	16	13.33	
12	10	8.33	24	20	28	23.33	36	30	22	18.33	
13	12	10	32	26.67	32	26.67	24	20	20	16.67	
14	22	18.33	16	13.33	48	40	16	13.33	18	15	
15	16	13.33	30	25	50	41.67	16	13.33	20	16.67	

16	6	5	24	20	32	26.67	40	33.33	18	15	
17	6	5	26	21.67	28	23.33	44	36.67	16	13.33	
18	12	10	30	25	36	30	26	21.67	16	13.33	
19	16	13.33	22	18.33	28	23.33	36	30	18	15	
20	16	13.33	6	5	22	18.33	28	23.33	48	40	

No. of responses and attitude scores obtained by Public students

S.N.	Statement No.	SA	A	U	D	SD	Total(x_1)
1	Guardians have positive attitude towards you while selecting mathematics.	30	36	24	6	4	100
2	The student of mathematics is helpful in scoring higher marks in the exam.	35	48	15	10	1	109
3	The selection of mathematics makes a smart and distinct of themselves in front of their friends.	20	48	27	8	1	104
4	To take mathematics, one should have a strong foundation in mathematics.	50	20	18	12	3	103
5	Mathematics provides us with knowledge useful in daily life.	40	20	27	12	2	101
6	Mathematics helps for further study.	30	24	30	8	4	96
7	Guardians should have helped you to study in home.	5	28	24	22	3	82
8	Economic should provided by guardians while taking extra-	20	20	36	8	5	89

	classes.						
9	Mathematics is better than other optional subjects.	5	46	21	18	1	93
10	Students select mathematics due to the pressure of guardian and teachers.	5	16	39	10	7	77
11	Mathematics is sufficient to select for study better education in higher education.	5	28	39	14	2	88
12	You are unsatisfied while selecting mathematics rather than other optional subjects.	0	36	15	20	6	77
13	You are satisfied by getting earlier students, parents, guardians and teachers in selection of mathematics.	10	28	30	16	3	87
14	The guardians, teachers play vital role in mathematics.	20	16	33	14	4	87
15	The family background should effect while choosing the mathematics.	5	44	36	4	4	93
16	Your guardians help you while doing the homework.	10	28	24	18	4	84
17	Economics background should effect while studying	10	28	27	18	3	86

	mathematics.						
18	Guardians' education should effect while selecting mathematics.	5	40	33	12	2	92
19	The parents' and teachers' attitude and behavior towards the students' play a role in mathematics.	5	28	36	14	3	86
20	Mathematics is easy subject.	5	8	18	16	13	60
	Total						X=1794

Here, X=1794

N_1=60

No. of responses and attitudes score obtained by Private Students

S.N.	Statements	SA	A	U	D	SD	Total(X_2)
1	Guardians have positive attitude towards you while selecting mathematics.	20	40	18	8	6	92
2	The student of mathematics is helpful in scoring higher marks in the exam.	25	32	21	12	4	94
3	The selection of mathematics makes a smart and distinct of themselves in front of their friends.	20	32	21	18	2	93
4	To take mathematics, one should have a strong foundation in mathematics.	30	24	24	8	6	92
5	Mathematics provides us with knowledge useful in daily life.	25	32	15	12	6	90
6	Mathematics helps for further study.	30	8	21	18	6	83
7	Guardians should have helped you to study in home.	15	20	24	18	5	82
8	Economic should provided by guardians while taking extra-	20	20	33	12	4	89

	classes.					
9	Mathematics is better than other optional subjects.	25	36	18	12	4	95
10	Students select mathematics due to the pressure of guardian and teachers.	35	12	15	16	7	85
11	Mathematics is sufficient to select for study better education in higher education.	10	28	15	20	6	79
12	You are unsatisfied while selecting mathematics rather than other optional subjects.	25	12	27	16	5	85
13	You are satisfied by getting earlier students, parents, guardians and teachers in selection of mathematics.	20	36	18	8	7	89
14	The guardians, teachers play vital role in mathematics.	35	16	39	2	5	97
15	The family background should effect while choosing the mathematics.	35	16	21	12	6	90
16	Your guardians help you while doing the homework.	5	20	24	22	5	76
17	Economics background	5	24	15	26	5	75

	should effect while studying mathematics.					
18	Guardians' education should effect while selecting mathematics.	25	20	21	14	6	86
19	The parents' and teachers' attitude and behavior towards the students' play a role in mathematics.	35	16	6	22	6	85
20	Mathematics is easy subject.	35	4	15	12	11	77
						$X_2 = 1734$

APPENDIX IX

Name of the Schools

Private Schools

⟩ Tamakoshi Secondary English Boarding School, Manthali

⟩ Karkaladevi Secondary English Boarding School, Manthali

⟩ Little Star Secondary English Boarding School, Manthali

⟩ Prime Secondary English Boarding School, Ramechhap

⟩ Himalayan Secondary English Boarding School, Ramechhap

Public Schools

⟩ Manthali H.S. School, Manthali

⟩ Gaurishankar H.S. School, Ramechhap

⟩ Chandeshwori H.S. School, Gothpani

⟩ Seti Devi H.S. School, Saludeurali

⟩ Kalika Devi Secondary School, Deurali