STUDENTS' ATTITUDE TOWARDS HOMEWORK IN MATHEMATICS LEARNING

A

THESIS

BY

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IN THE PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE DEGREE OF MASTER OF EDUCATION

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2020

LETTER OF CERTIFICATE

This is certifying that **Mr. Janak Bahadur Saud**, a student of the year 2073/2074 with campus Roll No 49/2073-074, Exam Roll No. 7328370, T.U. Reg. No. 9-2-820-16-2011 and thesis no 1542 have completed his thesis under rules and regulation of Tribhuvan University, Nepal. The thesis entitled **"Students' Attitude Towards Homework in Mathematics Learning"** has been prepared based on the result of his investigation conducted from January 2020 to September 2020 at the Department of Education, Tribhuvan University, Kirtipur- Kathmandu, Nepal. I hereby, recommended and forwarded that his thesis be submitted for the evaluation as the partial requirement to award Degree of Master of Education.

……..

Prof. Dr. Bed Raj Acharya

Head

Date:29 Sept. 2020

LETTER OF APPROVAL

This thesis entitled **"Students' Attitude Towards Homework in Mathematics Learning"** submitted by Mr. Janak Bahadur Saud in partial fulfillment for requirement of Degree of Masters in Mathematics Education has been approved.

Committee for the viva-voce	**Signature**
Prof. Dr. Bed Raj Acharya (Chairman)	……..
Dr. Bishnu Khanal (External)	……
Dr. Bed Prasad Dhakal (Member)	……

Date:16 Oct. 2020

RECOMMENDATION FOR ACCEPTATION

This is to certify that Mr. Janak Bahadur Saud, has completed his thesis entitled **"Students' Attitude Towards Homework in Mathematics Learning"** under my supervision during the period prescribed by the rules and regulation of Tribhuvan University, Kirtipur, Kathmandu, Nepal. I recommended and forward his thesis to the Department of Mathematics Education to organize final viva-voce.

…….

Dr. Bed Prasad Dhakal

(Supervisor)

Date:

Defence Date: 16 October 2020

DECLARATION

This thesis contains no materials, which has been accepted for the award of other degree in any institution.

……..

Mr. Janak Bahadur Saud

Date:……..

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Date:…….

……..

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ABSTRACT

The research entitled “students’ attitude towards homework in mathematics learning” Has been done to find out the secondary students’ attitude towards homework and to identify motivational and de-motivational factors that influence homework. This research was focused on Grade IX students. The grade IX students are those who are newly entered in secondary level. Due to level change (entered Basic level to Secondary) they should have study more course and they should do more practice of extra books of mathematics and need more time.

To fulfill the desire of the research cross-sectional survey were applied for collecting data. 200 students were selected as the sample population from 7 different schools who were studying in Grade IX from Kathmandu valley by random sampling technique. Opinionnaire and interview was applied as the primary data collection tools. MS Excel 2016 were used to analyze the data obtained from the opinionnaire and the thematic approach were applied to analyze data obtained from interview. Generally, students found positive about the homework. Homework helping them to get more marks in exam and to meet short term goals. But also, sometimes students are feeling bore with homework when they don’t have clear concept about content. They are taking homework as burden when it is extra and in festival period.

This research is mostly useful to students for developing study habit and to manage the time and to teachers for giving homework by scientific approach. Also, it is helpful to researchers, curricular developers, planners, policy makers as well as all stakeholders.

CONTENTS

Chapter I

INTRODUCTION

The research entitled “students’ attitude towards homework in mathematics learning” is done to find the secondary students’ attitude towards homework and to identify motivational and de-motivational factors that influence homework. This research is focused on secondary students. To fulfill the desire of the study cross-sectional survey is applied to collect data and survey was conducted in Kathmandu valley. This is mostly useful to students to develop more studying habit and managing time and for teachers to give homework by scientific approach. Also, it is helpful to researchers, curriculum developers, planners, policy makers as well as all stakeholders.

Background of the study

Homework is regarded as school work which is assigned by teachers to complete outside the school to students, for helping them to develop confidence and motivate to study more. It encompasses a number of activities like a period of reading to be performed, writing to be completed, problems to be solved, a project to be prepared or other skills to be practiced. Homework is an extension of learning opportunities, not displacement of or subtitle for classroom instruction. Homework can include a wide variety of student learning activities related to the curriculum and need not be exclusively “paper and pencils” activities (Luolley, 1955).

Homework is defined as written/oral individual or group tasks assigned to students by the teacher to be done out of school time with the purpose of getting prepared for a new learning material or reinforcing, expanding, practicing or completing newly learned material. Homework is one of the powerful tool of the

assessment of the study performance in school education. It is the assignment to be completed out of the regular school hours of the pupils.

Walberg (1984) states the nature of homework as "Homework that is stimulating related to classroom work. Carefully designed and suitable to student's abilities is likely to produce the best effects. Frequently, assignment of moderate amount of work are likely to yield more learning and longer retention that large but fewer assignment even though the total amount of time may be equal. Rapid, detailed and individualized feedback is likely to be appreciated and to yield larger effect than delayed, general and group feedback. Finally, other things being larger amounts of study time including homework can generally be expected to result in more learning".

However, Kohn (2006) asserts that there is no sufficient evidence for claiming that homework underwrites to academic achievement and that students' academic performance will not drop even if they are not given any homework.

Every individual has different view about homework. Many people think that homework can improve the child academic progress while some other people think that it is just a burden and a wastage of time. It seems that homework has both positive and negative effects on the achievement of students in mathematics learning. In fact, the excessive amount of homework in mathematics learning result in the frustration among the students and they are less active in their learning. There is no exact rule about how to assign homework in mathematics learning. Because opinions and beliefs about the right amount of homework also fluctuate enormously.

In the context of Nepal, trend that mathematics homework is given for engagement, time management at home. Here is concept that more homework more practice, and more homework helps to improve student's achievement in mathematics

learning. NASA (National Assessment of Student Achievement) report 2015 stated that homework affects their performance/achievement in mathematics.

Cooper (1989) stated that there is relation between homework and academic achievement. There is no unique view about homework therefore, the research is aimed to identify "student's attitude towards homework in mathematics learning".

Statement of the problem

Generally, homework is taken as it develops the student's ability in creativity and logical thinking, it can improve the students' performance in mathematics. But there is not unique rule to assign the homework to the students in order to increase their performance in mathematics. Teachers of mathematics not caring about student's interest. They are providing homework of their own thinking. Some of the teachers believe that the homework helps the students to increase their level of learning as well as promote the classroom learning. Teacher also believe that homework helps the student creative and logical thinking. However, most of the teachers claim that only giving homework is not effective. Student should not be overloaded by giving more homework to create more tension.

Hallam (2004) asserts that a certain amount of homework increases academic performance but 'more' of it will not cause any further increase. Furthermore, Cooper (1989) stated that there is relationship between homework and academic achievement. The perfect use of home assignment can have positive impact on the performance of student in mathematics.

However, Kohn (2006) asserts that there is no sufficient evidence for claiming that homework underwrites to academic achievement and that students' academic performance will not drop even if they are not given any homework.

However, here the secondary students are considered as the grade IX students, the grade IX students are those students who are newly entered in secondary level. Due to level change (entered Basic level to Secondary level) they should have study more course. They should prepare the plan for SEE, should do more practice of extra books of mathematics and need more time. Also, secondary level is taken as the base for the higher level education system. So, I want to see their attitude towards homework because attitude includes the students' belief, interest, time engagement and management towards homework.

Objectives of the study

The general objectives of this study is to explore the secondary student's attitude towards homework in mathematics learning. This objective is stated in the following specific form:

- To identify the attitude towards mathematics homework of secondary students
- To find out the motivational and de-motivational factors that influence attitude towards homework

Justification of the study

The findings are applicable for those who are interested, involved in the pedagogy of mathematics. It will helpful to the teachers, students, researchers, curricular developers, planners, policy makers as well as stakeholders. This paper is mostly useful to teachers to give homework by scientific approach, it helps to students to develop studying habit and to manage the time. It will be very helpful for students of class nine to develop base for SEE examination and higher level because they are newly entered in secondary level, it will share ideas and play motivational role.

Moreover, there is no unique rule to assign the homework. People have different view about to assign the homework. So, here tried to carry out the students' attitude towards homework.

Delimitations of the study

The research had the following delimitations.

- Cross-sectional survey design is used, for this 200 students were selected who were studying in class 9 in Kathmandu valley
- Opinionnaire tool was used to collect data after pilot test, determination of reliability and validity
- The data collection procedure was completed within 30 days
- The study was based on attitude towards homework of secondary students

Operational definition of the key terms

***Attitude*:** The students' belief, interest, time engagement and their parental involvement towards homework.

***Homework*:** The school work which should be done outside the school by students.

***Secondary students*:** The students who are studying in grade IX and X under National Curriculum Stream Nepal.

Chapter II

REVIEW OF RELATED LITERATURE

Review of Empirical Literature

Yadav (2017) conducted a study entitled on "students attitude towards homework" to find out the attitude of the students of secondary level of Siraha district. To fulfill the objectives of the study he has taken 150 students of the public and private schools as sample by simple random sampling. To find out the attitude of the students the opinionnaire was implemented. The result of this study indicates that there is positive attitude of the students towards homework. There are many factors influencing the attitude of the students towards homework. It was found that there is positive impact of the home environment, school environment, peers influence and the self-related factors.

A study carried out by Tam and Chan (2016) entitled on "what is homework for? Hong Kong private school teachers Homework conceptions" aiming at how teachers think about or perceive the nature and purpose of homework. They used a mixed method of the study along with a survey questionnaire over 317 teachers and interview among 38 teachers in Hong Kong. The result of the study indicates that teachers focuses on a positive perspective towards the homework assignment for the students.

Ghalan (2015) studied on "Factors affecting learning mathematics at secondary level" aimed at investigating factors affecting learning mathematics at secondary level. The objectives of this study were to identify the school related factors that affects mathematics learning and to identify the strategies taken by school to promote mathematics learning. The study was in qualitative nature as well as

descriptive use. This study was conducted with the sample of 8 students, 2 mathematics teachers, 2 head teachers and 2 guardians. The finding of the study shows that the traditional type of exercise in teaching-learning activities were the one of the causes of poor mathematics learning. No proper interaction was done between teachers and students. The negligence towards homework also seen as problem of mathematics learning. There is communication gap between teacher and guardians.

Limin GU (2015) studied on "Swedish Lower Secondary School Teachers Perceptions and Experiences Regarding Homework" to investigate homework in Swedish lower secondary schools: teachers' perceptions and experiences about it and their understanding of its potentials and challenges for students learning and development. The sample of the study was 201 and survey method is applied. The outcome notified that most teacher assign homework and believe it will benefit students learning when it addresses consolidating and reinforcing knowledge already taught and increases skills through repetition. Further the findings highlight the educational implications of critical reflections on the design of homework and the quality of homework assignment.

Bist (2018) completed a research on the topic "students' perception towards homework in mathematics learning" With objectives to explore the perception of secondary students towards homework. To accomplish this objective, he has employed a cross-sectional survey in order to complete this study. The population of his study consisted 120 students, those who are studying in class 10 of Kathmandu District using random sampling techniques. There is used a questionnaire and semi-structured interview as the primary data collection tools. He performed SPSS 21.0 statistical software to analyze the data obtained from the semi-structured interview. The data showed that assignment was useful to understand mathematics more deeply

and meaningfully. The sample of the study underscored that homework reflects their own learning progress, however it was also accentuated that they did not have enough time for extracurricular activities.

Thomas (2013) conducted a study entitled “Middle school student perceptions of homework in mathematics”. The study was to understand students’ perception of homework assignments. For this, 230 middle school students and their teachers were selected. The research questions focused on students’ attitude about homework, the relation of students’ self-efficacy and support resources their homework completion and the relationship of student’s general level of achievement in mathematics to their attitude about homework. Overall students reported positive attitude and grades in mathematics. Gender and general level of achievement in mathematics class did show the relationship with certain aspects of students’ responses regarding homework.

Acharya (2015) completed a research on the topic “Problems faced by mathematics teacher at secondary level” to find out the problems and cause faced by secondary teachers in teaching mathematics. The descriptive survey research design was used. The nature of the study was qualitative. Questionnaire, class observation form and interview schedule were used to collect data. The research was focused on Palpa district, for this 15 schools were selected. The outcome of the research is, teachers inefficient and unenthusiastic to execute their duties properly in the classroom. Most of the teachers’ problem is lack of proper classroom management. They are not getting chance to participate in trainings, seminars any other activities. Some trained teacher also not using their proper skill in classroom teaching.

Sah (2017) studied on the topic “Attitude of students towards homework at lower secondary level in mathematics” aimed to compare the attitude of rural and urban area students towards homework in mathematics. The objective of the study

was to find out the attitude of lower secondary students towards homework in mathematics. The quantitative research design with the survey design were used. The sample of the study were 200 students selected randomly from the 5 public schools at Sunsari district. Questionnaire was used to collect data based on Likert scale. The Chi-square test was employed to find out the attitude of students and t- test was used to find out the attitude of rural and urban students towards homework in mathematics at 0.05 level of significance. The result of the study reflects that lower secondary students had positive attitude towards homework in mathematics. The rural and urban students had similar attitude towards homework in mathematics.

Booth (2010), studied on topic entitled "The effects of homework assessment on students' motivation and achievement" for the purpose to determine if the manner of assessing homework is associated with student motivation and student' achievement. Participants are 33 students of the ages 16 to 18 from two sections of advanced placement calculus at the comprehensive high school. The two sections are assigned the same homework problems. The assignment in one section were submitted and assessed for a grade. The other sections did not submit the homework assignment but took homework quizzes that were random problems taken from the homework assignment. Interview were used in the group of 18^{th} to identify benefits of completing their daily homework. To determine the homework beliefs and practices students and their parents completed surveys. The findings of the research are, there is good achievement in mathematics who are motivated towards homework.

Sigdel, (2016) studied on topic entitled "Attitude of students towards homework at secondary level in mathematics" to find out the attitude of secondary level students towards homework in mathematics and to compare the attitude of urban and rural area students towards homework in mathematics. 800 students were selected

from 250 schools of Banke district through purposive sampling procedure. Out of these 300 students were 5 schools of urban area and 500 students from 20 schools of rural areas. The outcome of the research was the students both of rural and urban areas have positive attitude towards. Most of the students have the same view about homework, homework is helpful to study mathematics. But also there were found that most of the students are weak and fail in mathematics who are highly motivated towards homework due to negligence of teachers, guardians and school administration in teaching learning and management procedure. Teacher also found positive towards homework.

By reviewing the above literatures, it seems that Most of the researches have the common findings about the homework. The findings of the research are positive view towards homework. There is relationship between homework and achievement in mathematics. It was found that the achievement of students influenced by motivational/de-motivational behaviour of teachers. The students who are highly motivated their achievement is better than less motivated and unmotivated students. In the above reviewed literature, I didn't find class IX students are at focus point. So, I want to focus class IX students because class IX students are those who are newly entered in secondary level from basic level and secondary level is taken as base for the higher level education.

Review of Theoretical Literature

Expectancy Value Theory: Expectancy value theory is a developmental theory, incorporating factors such as the development of self-concept and influence of socializers such as parents and teachers. This theory has been developed by Jacquelyn Eccles and her colleagues (Eccles & Wingfield, 2002). This theory has been developed in many different fields including Education, Marketing, Communication,

Health and Economics. The model differs in its meaning and implications for each fields.

The theory postulated that achievement-related choices are motivated by a combination of peoples' expectation for success and subjective task value in particular domains. For example, children are more likely to pursue an activity if they expect to do well and they value the activity. According to the expectancy value theory (Eccles & Wigfield, 2002), homework motivation is conceptualized to have an expectancy and a value component. A students was belief in the being able to execute goal-oriented behaviour successfully represent the expectancy component. The model further differentiates four components: 1) Attainment value (i.e., importance of doing well in the task of homework), 2) Intrinsic value (i.e., homework is taken as enjoyment task), 3) Utility value (i.e., homework is useful for future goals), and 4) cost (i.e., homework may represent punishment by exerting extra effort).

Identifying the students' attitude towards homework and finding motivating and demotivating factors to do homework is the aim of this study. In this, students view about homework, why they are motivated/ de-motivated to do homework, what they seen benefits of homework, what they seen use of homework in further life, to do homework they are enjoying or not are the measuring factors. For measuring these above mentioned statements I feel Expectancy Value-Theory is very proper. So, this theory is used to fulfill the goal of the research.

Other dimensions of the motivation are also included in this study. Linking school, subject value and self-concept are essential components of motivation (Marsh et al., 2012). The concept of motivation comes with the learning in one way or the other. Some students seem naturally enthusiastic about learning but many needs or expect their instruction to inspire them. The term motivation to learn has a slightly

different meaning. It is defined by one author “the meaningfulness, value and benefits of academic task to the learner-regard-less of whether or not they are interesting” (Marshall, 1987). Author note that motivation to learn is characterized by long-term, quality involvement in learning and commitment to the process of learning. Once children start school, they begin forming beliefs about their school-related successes and failures. The sources to which children attribute their successes (commonly effort, ability, luck, or level of task difficulty) and failures (often lack of ability or lack of effort) have important implications for how they approach and cope with learning situations (Raffini, 1993).

Student motivation is often divided into two categories:

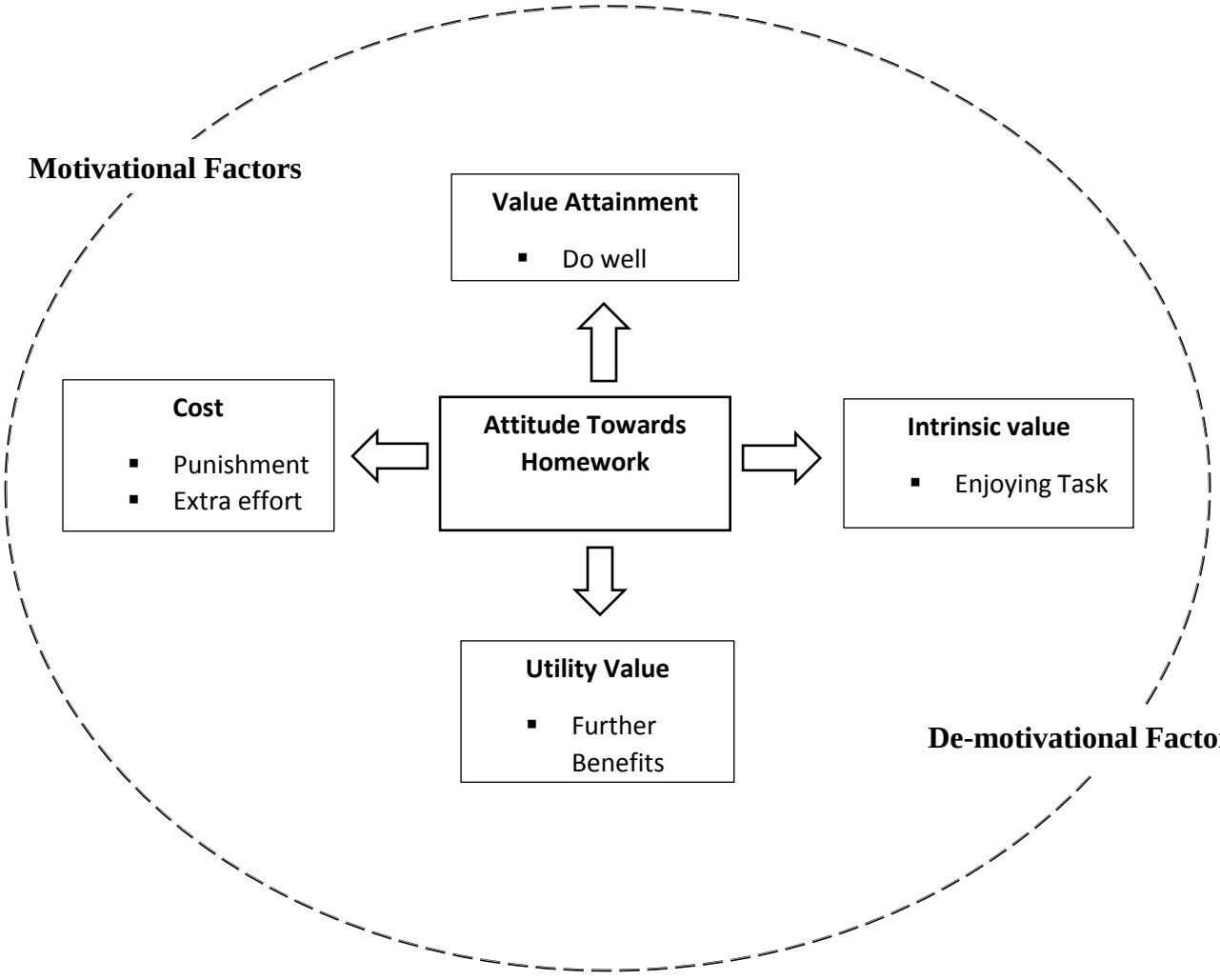
***Extrinsic Motivation*:** A student can be described as extrinsically motivated when he or she engages in learning “purely for the sake of attaining a reward or for avoiding some punishment”. School practices that seek to student extrinsically include publicly recognizing student for academic achievement; giving out stickers, candy, and other rewards; and taking away privilege, such as recess, on the basis of student’ academic performance.

***Intrinsic Motivation*:** A student can be described as intrinsically motivated when he or she is motivated from within: Intrinsically motivated students actively engaged themselves in learning out of curiosity, interest, or enjoyment, or in order to achieve their own intellectual and personal goals. A student who is intrinsically motivated will not need any type of reward or incentive to initiate or complete a task. This type of student is more likely to complete the chosen task and be excited by the challenging nature of an activity.

Conceptual framework

A conceptual framework is used to understand the place of and inform the direction of - a research project. It maps out the actions required in the course of the study given his previous knowledge of the researchers' point of view and his observations on the subject of research (Regoniel, 2015).

The following framework were used:



Sources: Eccles & Wigfield, (2002)

The above mentioned four components are described as below:

- **Attainment value:** Attainment value is the importance of doing well in the task of homework. It relates to students' conception of their identity and ideas or their competence in the given domain.
- **Intrinsic value:** Intrinsic value is the taking homework as interesting or enjoying task. It is the self-motivation to enjoying with homework.
- **Utility value:** Utility value is the usefulness of homework for future goals. It is useful or not for further examinations and base for mathematics.
- **Cost:** Homework may represent punishment by exerting extra effort. It may the loss of time. Psychologically its impact is positive or negative.

Chapter III

METHODS AND PROCEDURES

This chapter deals with procedure of study. This chapter plays vital role in the research. It determines how to complete research in systematic way. The method applied in this study is discussed as below: Population, sample and sapling strategy, study areas, data collection tools and techniques, data collection procedures.

Design and Procedure of the study

Survey design were used to complete the study. Survey is the research where information's are collected through questionnaire, interview and observation (Khanal, 2074). There are several types of survey. In this study cross-sectional survey design is applied. Cross-sectional surveys are observational surveys conducted in situations where the researcher intends to collect data from a sample of the target population at a given point in time. I used the cross-sectional survey design because my intention is to identify the students' attitude towards the homework, and it is effective for providing a snapshot of current behaviors, attitudes, understanding of the phenomena and belief of the population.

Population, sample and sampling strategy

Population were the class 9 students of Kathmandu valley who are studying mathematics under National Curriculum Stream of Nepal. For this, 7 schools of Kathmandu valley were selected by random sampling technique. Out of these 2 were governmental and 5 were private schools. 200 students were selected as the sample population from the total population of the study. Out of these selected students, 5 students were selected for interview as sub sample where 3 students were girls and 2 were boys.

Data collection tools and techniques

To collect dada researcher used opinionnaire and semi-structured interview.

Opinionnaire: Opinionnaire were used based on Likert's five-point Scale to know the students' attitude towards homework. Which are strongly agree, agree, neutral, disagree and strongly disagree. The questions were categorized in to four category according to conceptual framework. Which are attainment value, intrinsic value, utility value and cost value. Every term contained 6 questions.

***Interview Schedule*:** The interview is a face to face interpersonal situation in which the interviewer asks questions to the respondent to obtain answers to the research problem.

Thus, in this study 4 open-ended questions were asked to 5 students to identify motivational and de-motivational factors that influence homework. The questions were related to motivational de-motivational factors and their views were recorded.

Reliability and Validity of the tools

Opinionnaire

The pilot test was conducted for the validation of opinionnaire which are constructed based on four categories of attitude :(Attainment value, Intrinsic value, Utility value and Cost value) developed by expectancy value theory (Eccles & Wigfield, 2002). For the reliability Cronbach's alpha is calculated of obtained data by the help of SPSS tool. The reliability coefficient were 0.79. The validity of the opinionnaire were ensured by expert judgement.

Interview schedule

For the reliability, constructed open-ended questions were asked twice to 2 students in fix interval of time and the answers were similar in both time. The validity of the questions was ensured by expert judgement.

Data collection procedures

Different schools were visited and requested for the permission with school administration. After taking permission I visited towards students and gave general information about research and purpose of the study and privacy of them who are going to involve in that event. Then, opinionnaire survey were conducted, before filling up survey opinionnaire form, the participant was informed about proper way of filling up.

The survey was conducted on first three weeks of Magh 2076 B.S. in Kathmandu valley.

In second stage, interview with students were taken to identify motivational/ de-motivational factors that influence students' attitude towards homework. For this, 4 open-ended questions were asked to 5 students' and responses are recorded.

Data analysis and Interpretation Procedure

The mean, percentage and standard deviation of each items included in opinionnaire is calculated to analyze the data descriptively. The data collected from interview is interpreted and analyzed by thematic approach.

Ethical Considerations

For this research following ethical considerations were applied.

- Permission is taken from School administrations and Principal and Mathematics teachers also informed before collecting data from survey
- The institutions name is not being mentioned without permission of school administration
- Students and school administration are informed recording data and to take photographs (if needed)
- Students were informed for secrecy of their view while taking interview
- The proper language is used in research process

Chapter IV

ANALYSIS AND INTERPRETATION OF DATA

This chapter encompasses the analysis and interpretation of the collected information. This chapter is organized in terms of objectives stated in chapter. The collected information was analyzed and interpreted to find out the secondary students' attitude towards homework. For this set of opinionnaire based on Likert five-point scale used (strongly agree, agree, neutral, disagree and strongly disagree). The mean, percentage and standard deviation of each item was interpreted.

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

- Attitude towards mathematics homework of secondary students
- Motivational and de-motivational factors that influence attitude towards homework

Attitude towards mathematics homework of secondary students

24 questions were asked with opinionnaire set (Appendix- A) to the sampled students to carry out the attitude towards mathematics homework at secondary level. To find out the attitude towards homework mean, percentage and standard deviation were calculated of every statement.

The attitude towards students' homework was measured in four categories: Attainment value, intrinsic value, utility value and cost value which are given by expectancy value theory. The obtained data is analyzed below:

Attainment Value

Attainment value is the importance of doing well in the task of homework. It relates to students' conception of their identity and ideas or their competence in the

given domain. In this aspect 6 statements were performed in the opinionnaire set. The responses are presented below in table.

Percentage, Mean and Standard deviation of the statements

Table I

S.N.	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	No Response	Mean	Standard Deviation
1	Homework is essential in mathematics learning	76	91	22	9	2	0	4.15	0.86
		38%	45.5%	11%	4.5%	1%			
2	Homework helps to develop good learning techniques	86	82	22	7	3	0	4.21	0.88
		43%	41%	11%	3.5%	1.5%			
3	Homework helps to develop critical thinking	46	87	53	9	4	1	3.8	0.95
		23%	43.5%	26.5%	4.5%	2%			
4	Homework helps to reduce the mistakes	67	88	28	9	6	2	3.98	1.04
		33.5%	44%	14%	4.5%	3%			
5	Homework is extra-load	22	35	59	26	57	1	2.69	1.35
		11%	17.5%	29.5%	13%	28.5%			
6	It is difficult to manage time for homework	15	40	57	47	39	2	2.7	1.23
		7.5%	20%	28.5%	23.5%	19.5%			

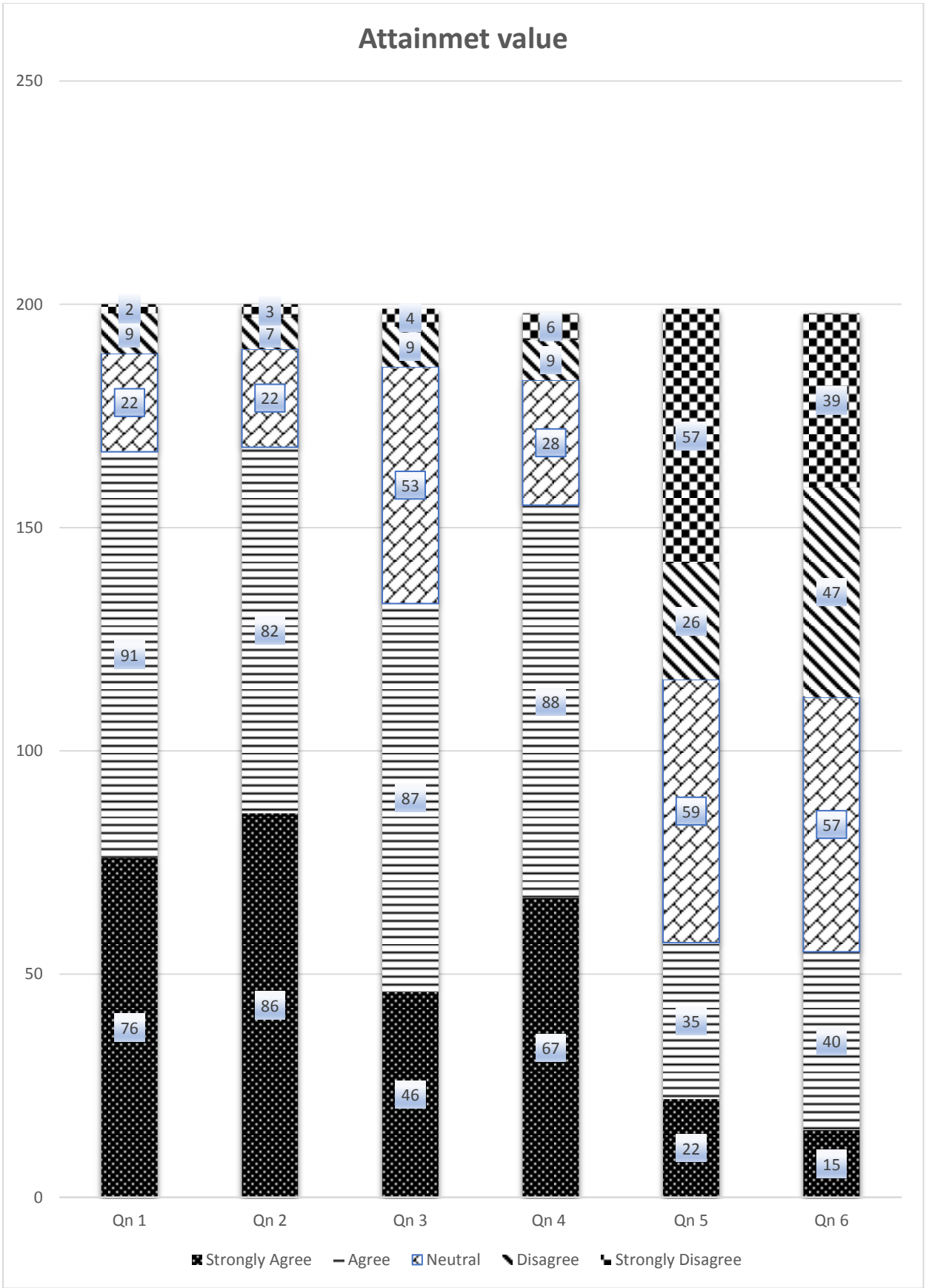
Most of the statements are accepted by students or they are mostly positive about above statements. In few statements students are seen neutral and disagree too. So, above statements are describes below particularly:

Statement number 1 were “Homework is essential in mathematics learning”, in this statement 83.5% students are agreed, mean is 4.15 and standard deviation is 0.86. it shows that most of the students are positive about the statement. The statement 2 were “Homework helps to develop good learning techniques”, this statement is accepted by 84% students, mean is 4.21 and the standard deviation is 0.88. It also shows that students are positive about this statement or homework helping them to solve the problems by different techniques. The statement 3 were “Homework helps to develop critical thinking”, in this statement 66.5% students are agreed, the mean is 3.8 and the standard deviation is 0.95. From this we say statement is accepted but 26.5% students are neutral about statement and 1 student did not response about the statement. So, we cannot conclude this statement is totally accepted. The question number 4 were “Homework helps to reduce the mistakes”, from table 77.5% students agreed about the statement, 3.98 is the mean and 1.04 is the standard deviation. So, here concluded that the statement is accepted and the statement is helpful to them. The statement number 5, “Homework is extra-load”, 28.5% students accepted the statement, 29.5% are neutral about it and 41.5% students disagree about the statement. The mean score of the statement is 2.69, the standard deviation is 1.35. From above data concluded that students’ attitude towards this statement is neutral. The statement number 6, “It is difficult to manage time for homework”, 27.5% students accepted the statement, 28.5% students’ neutral about it and 43% students disagree about the statement. The mean score of the statement is 2.7, the standard deviation was 1.23. Most of the students are disagree or their view is

they do not have any problem to manage the time. But also, 70.5% students are agreeing and neutral. So, the conclusion is students have really problem to manage the time for homework.

From above table it was found that students have different opinion about different statements. It's because of every student have his/her own understanding level and they are from different community and different places. In aggregate most of the students are positive about Attainment value of homework. But also, many students are neutral and disagree about the statements mentioned in Table I. So, if homework is given by scientific approach then it will be easily acceptable by students.

The above data also can be shown in table below:


Attainmet value
250
200
150
100
50
0
2
9
22
91
76
3
7
22
82
86
4
9
53
87
46
6
9
28
88
67
57
26
59
35
22
39
47
57
40
15
Qn 1
Qn 2
Qn 3
Qn 4
Qn 5
Qn 6
Strongly Agree
Agree
Neutral
Disagree
Strongly Disagree

Intrinsic Value

Intrinsic value is the taking homework as interesting or enjoying task. It is the self-motivation to enjoying with homework. In this aspect 6 statements were performed and the responses are described as below:

Percentage, Mean and Standard deviation of the statements

Table II

S. N.	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	No Response	Mean	Standard Deviation
7	I enjoy with homework	13 6.5%	58 29%	58 29%	36 18%	32 16%	3	2.88	1.22
8	I have problem to get start my homework	22 11%	52 26%	56 28%	52 26%	14 7%	4	3.04	1.18
9	I like homework only when if	84 42%	35 17.5 %	36 18%	33 16.5%	12 6%	0	3.73	1.32

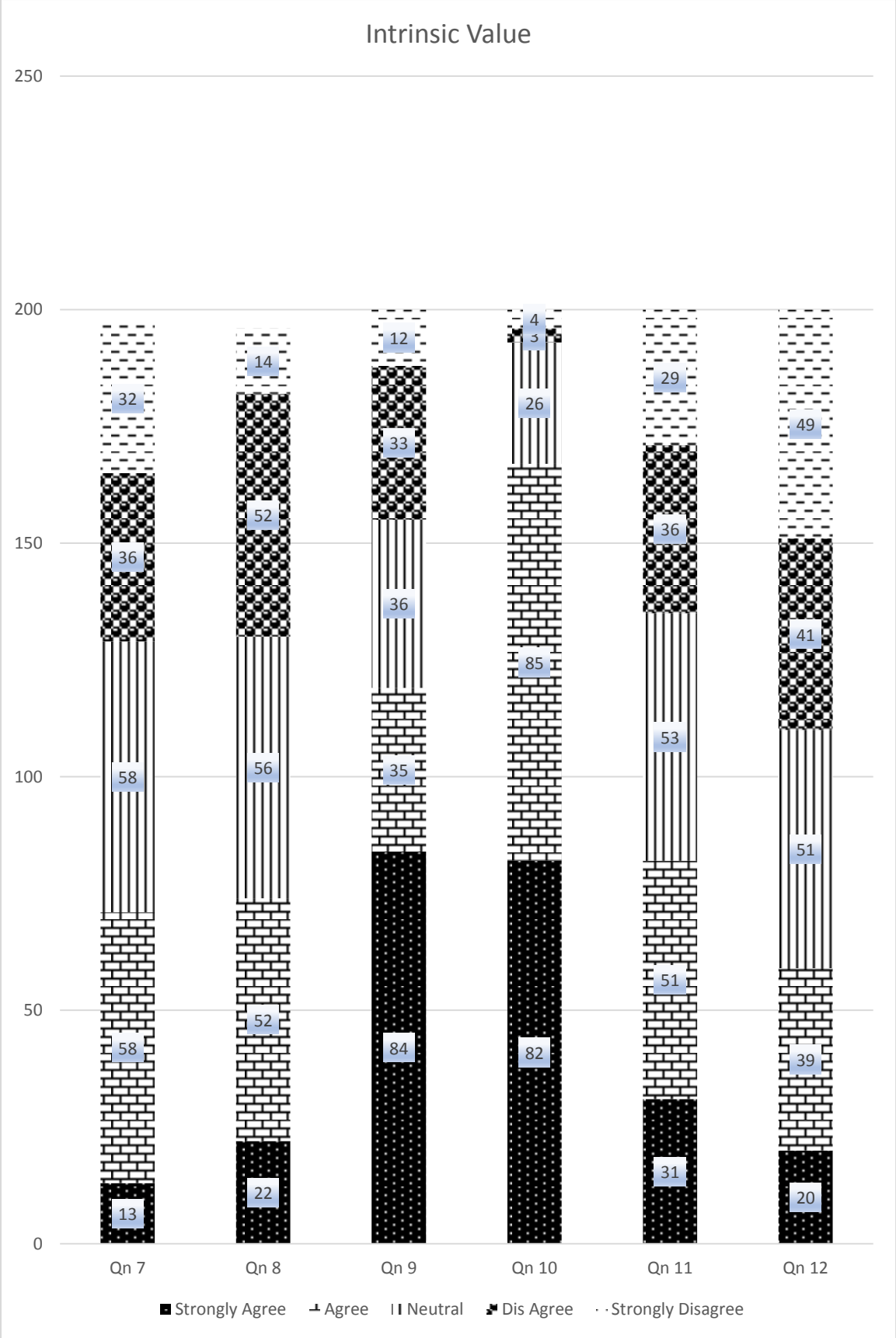
	it is easy								
10	Homework helps to get progress in study	82 41%	85 42.5%	26 13%	3 1.5%	4 2%	0	4.19	0.86
11	Homework gives mental pressure than learning	31 15.5%	51 25.5%	53 26.5%	36 18%	29 14.5%	0	3.1	1.28
12	Homework should be given every day	20 10%	39 19.5%	51 25.5%	41 20.5%	49 28.5%	0	2.7	1.30

The statement no 7 is “I enjoy with homework”, 35.5% students agreed the statement, 29% are neutral and 34% are disagree about the statement and mean score is 2.88, standard deviation is 1.22. From this data we can conclude that view is tended towards neutral. It seems that students are not enjoying with homework. So, why they are not enjoying with homework it should be matter of research and it should be point out. The statement number 8, “I have problem to get start my homework”, 37%

students accepted the statement, 28% are neutral about it, 33% are disagree about it and mean score is 3.04. Outcome is about equal agree, neutral and disagree about this statement. The statement number 9, “I like homework only when if it is easy”, 59.5% accepted the statement and the mean score is 3.73. So, the conclusion is students are positive about the statement. The statement no. 10 is “Homework helps to get progress in study”, 83.5% students agreed about the statement and the mean score is 4.19. So, here also same conclusion as previous statement or homework helping their study progress. The statement no. 11 is “Homework gives mental pressure than learning”, 41% students are agreed the statement, 26.5% are neutral and 32.5% disagree about the statement. So, comparatively more students taking homework as the mental pressure. The statement no. 12 is “Homework should be given every day”, 49% students are disagreeing and 25.5% are neutral about the statement and mean score is 2.7 and 1.3 is the standard deviation. The conclusion is they do not want homework every day. So, by finding reason homework should be given by scientific approach.

From the table II it was concluded that really the students have problem to get study the homework and they are enjoying with homework only when if it easy or if they have clear concept about the content. Also, they want homework but not every day. So, it should be given by very appropriate way.

The above data also can be shown in table as below:


Intrinsic Value
250
200
150
100
50
0
Qn 7
Qn 8
Qn 9
Qn 10
Qn 11
Qn 12
Strongly Agree
Agree
Neutral
Dis Agree
Strongly Disagree
13
58
58
36
32
22
56
52
52
36
14
84
35
36
33
12
82
85
26
4
31
53
51
36
29
20
51
39
41
49

Utility Value

Utility value is the usefulness of homework for future goals. It is useful or not for further examinations and base for mathematics.

Percentage, Mean and Standard deviation of the statements

Table III

S. N.	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	No Response	Mean	Standard Deviation
13	Homework helps to get more marks in exam	49	66	49	27	9	0	3.6	1.13
		24.5%	33%	24.5 %	13.5%	4.5%			
14	Homework helps to meet short term target	23	89	58	22	7	1	3.48	0.99
		11.5%	44.5 %	29%	11%	3.5%			
15	Homework helps to study more	44	84	39	19	12	2	3.66	1.16
		22%	42%	19.5 %	9.5%	6%			
16	Homewor	80	87	18	9	6	0	4.13	0.96

	k helps to understand mathematical concepts	40%	43.5%	9%	4.5%	3%			
17	Homework is not useful in mathematics learning	66 33%	88 44%	27 13.5%	14 7%	5 2.5%	0	3.98	0.99
18	Homework disturbs in self-study	40 20%	59 29.5%	50 25%	24 12%	25 12.5%	2	3.3	1.31

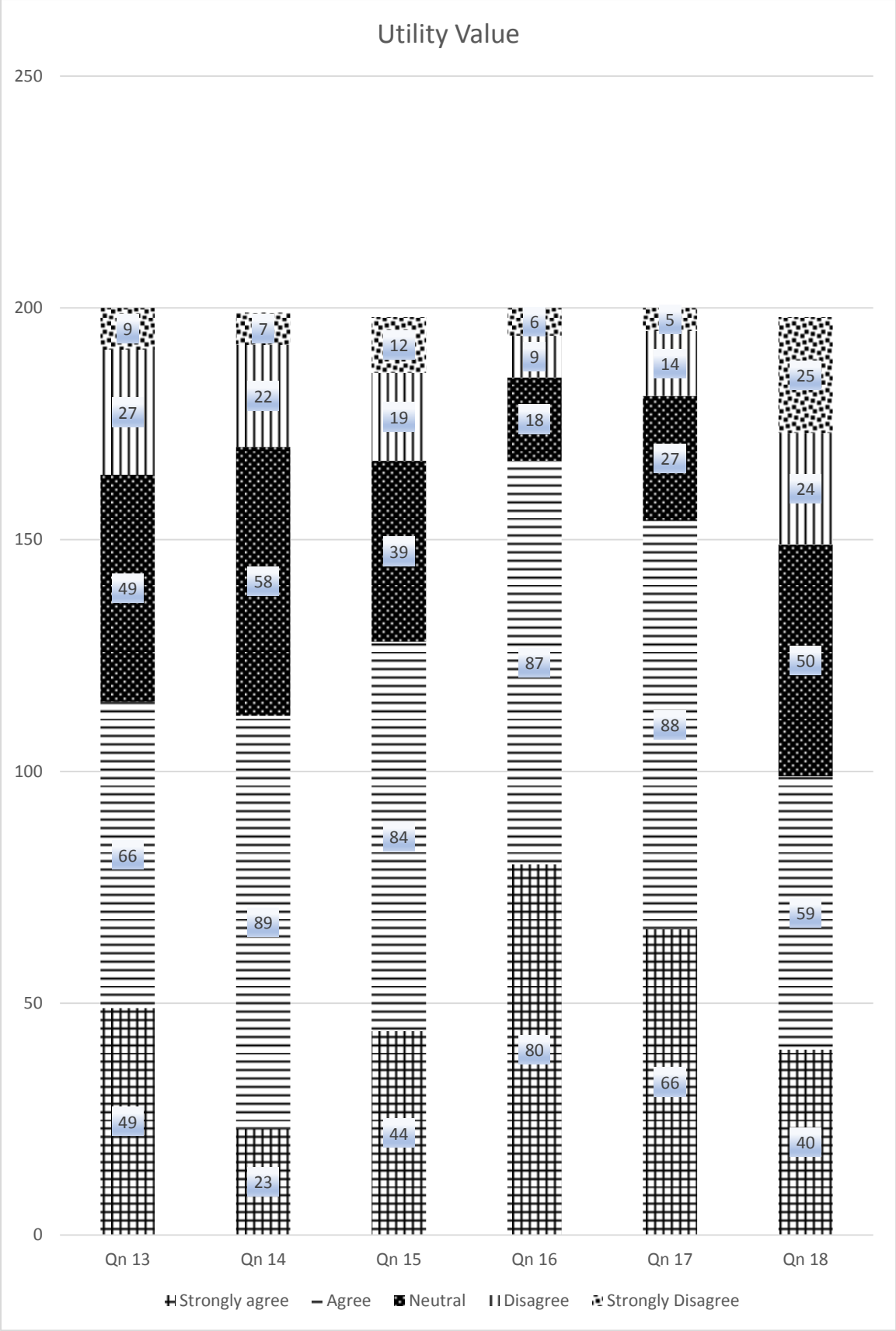
In this Table III also statements are described as previous tables. Here the statements are related to use of mathematics in further life. Mathematics is helping or not in their further goals, which are described as below:

The statement 13 is “Homework helps to get more marks in exam”, 57.5% are agreed, 24.5% are neutral and the mean score is 3.6. So, concluded that students’ attitude is positive towards this statement. Homework is one part of getting more marks in exam. The statement number 14 is, “Homework helps to meet short term target”, 56% students accepted the statement, 3.48 is the mean score and 0.99 is the standard

deviation. Therefore, homework helping them to meet their short term goal. The statement number 15 is, “Homework helps to study more”, 64% students accepted the statement, mean score is 3.66. Then, we can say homework encouraging them to study more at home. The statement number 16 is “Homework helps to understand mathematical concepts”, the number of students who accepted the statement is 83.5%, the mean score is 4.13 and standard deviation is 0.96. Mathematics is conceptual subject. To make the mathematical concept clear there is need of different techniques, process and factors. One of them is homework. By above data we can easily say that it is helping them to understand mathematical concepts. The statement number 17, “Homework is not useful in mathematics learning”, 77% students Agreed about the statement, 13.5% students are the neutral and 9.5% students are disagreeing about the statement. 3.98 is the man value and 0.99 is the standard deviation. From this we say homework not playing role in mathematics learning. They didn’t feel importance of homework in mathematics learning. The statement number 18 is “Homework disturbs in self-study”, 49.5% students are accepted the statement, 25% are neutral about it, 9.5% are disagree about the statement. More students feeling disturbance by homework. one fourth students are neutral about the statement. Finally, concluded that homework disturbing their self-study.

Finally, from the table III concluded that homework helping the students to meet their short term goals. It helping them to make clear concept of mathematics. But, they feel disturbance by homework in their self-study and they aren’t seen homework’s role in mathematics learning.

The above data also can be shown in table as below:


Utility Value
250
200
150
100
50
0
9
27
49
66
49
7
22
58
89
23
12
19
39
84
44
6
9
18
87
80
5
14
27
88
66
25
24
50
59
40
Qn 13
Qn 14
Qn 15
Qn 16
Qn 17
Qn 18
Strongly agree
Agree
Neutral
Disagree
Strongly Disagree

Cost Value

Homework may represent punishment by exerting extra effort. It may the loss of time. Psychologically its impact is positive or negative.

Percentage, Mean and Standard deviation of the statements

Table IV

S. N.	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	No Response	Mean	Standard Deviation
19	Homework propound to think critically	30	68	66	21	7	8	3.35	1.2
		15%	34%	33%	10.5%	3.5%			
20	I feel bore to do homework	23	45	59	36	36	1	2.9	1.28
		11.5%	22.5 %	29.5 %	18%	18%			
21	Homework is punishment	46	61	45	18	28	2	3.37	1.36
		23%	30.5 %	22.5 %	9%	14%			
22	Homework is unnecessa	59	61	40	21	18	1	3.6	1.28
		29.5%	30.5 %	20%	10.5%	9%			

	rily loss of time								
23	I'm weak in mathematics by lack of homework	52	63	44	25	16	0	3.55	1.23
		26%	31.5%	22%	12.5%	8%			
24	I'm not getting enough time to play due to homework	29	40	46	42	43	0	2.85	1.36
		14.5%	20%	23%	21%	21.5%			

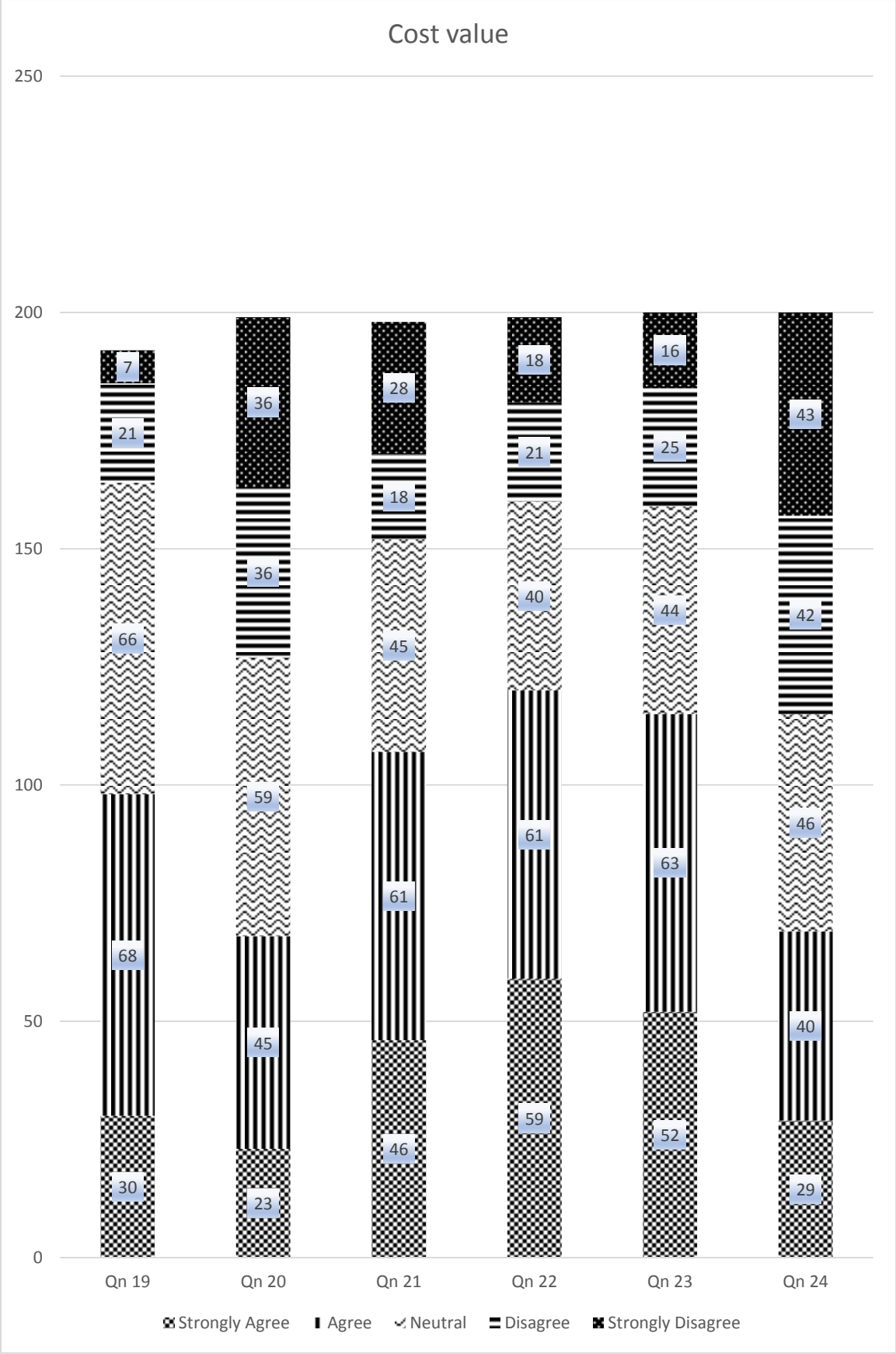
Here the statements of table IV are described as below:

The statement number 19 is "Homework propound to think critically", 49% students agreed the statement, 33% neutral about this and 8 students did not response the statement, the mean score is 3.35. Most of the students are positive about the statement. But also one-third students are neutral and 8 students not responses. So, we cannot say it is positively accepted statement. The Statement no. 20, "I feel bore to do homework", 34% agreed the statement, 29.5% are neutral and 36% are disagree about the statement. Standard deviation is 1.28. All three aspects are comparatively chosen equally. The statement no. 21, "Homework is punishment", 53.5% students are agreed

about the statement, 22.5% are neutral and the mean score is 3.37. So, the conclusion is students are taking homework as punishment. Why they are taking it as punishment it should be point out after research in this sector. The statement no. 22 is “Homework is unnecessarily loss of time”, 60% students are agreed about the statement, 20% are neutral and the mean score is 3.6. From this it seems clear that students are taking homework as burden and unnecessary loss of time. The statement no. 23 is “I’m weak in mathematics by lack of homework”, 57.5% accepted the statement, 22% are neutral about the statement. The mean score of the statement is 3.55. So, the students are positive about this statement. The statement no. 24 is “I’m not getting enough time to play due to homework”, 42.5% are disagreed the statement, 23% are neutral about the statement. From this date we can say that there is no any disturbance of homework in entertainment or to play game.

So, by analyzing Table IV concluded that homework helping students to think critically. They are not feeling bore to solve mathematical problems. They are feeling weak by lack of homework. But also they are taking homework as the punishment and unnecessarily loss of time.

The above data also can be shown in table as below:


Cost value
250
200
150
100
50
0
7
21
66
68
30
36
36
59
45
23
28
18
18
45
61
46
18
21
40
61
59
16
25
44
63
52
43
42
46
40
29
Qn 19
Qn 20
Qn 21
Qn 22
Qn 23
Qn 24
Strongly Agree
Agree
Neutral
Disagree
Strongly Disagree

Motivational and De-motivational factors that influence attitude towards homework

In this chapter semi-structured interview were taken. Where 4 open ended questions (Appendix-B) were asked to 5 students from sample population. Out of these five students 3 were girls and 2 were boys.

The views of students are interpreted as below:

Importance/ use of mathematics

When first question asked "Do you like mathematics? Why?", the student A said 'I like mathematics because mathematics is interesting subject. When solving mathematical problems, I feel time is passing rapidly. The reply of second question "is mathematics useful in our life" were she found only use of home arithmetic while purchasing goods. She said don't know the use of many parts of mathematics like algebra, trigonometry. So, she thinks there is use of mathematics in further life but where it is used unknown.

When the same question asked to student B, "do you like mathematics? Why?", student replied yes like mathematics most because it is critical subject and it develops critical thinking. I enjoy to do difficult questions of mathematics. In mathematics we have to write. Doing practice by writing is my favorite part. It propounds to think critically. When second question is asked "is mathematics is useful in our daily life?", she replied yes it is very useful subject. She found mostly while buying goods from shop, while paying electricity bill, telephone bill, and also use of geometry in daily life. She told hope other parts of mathematics also useful in further study.

Similarly, when asked to student C, “Do you like mathematics? Why?”, the student said ‘yes I like mathematics. Mathematics is my favorite subject because it is interesting subject and there is no chance of grammatical mistakes. Easy to get marks in exam too’. The second question was “is mathematics is useful in our life?”, the student replied mathematics is used everywhere. In intermediate level also there is use of mathematics in most of the subject. Mostly it is used in medical, engineering and teaching field.

Same question asked to student D, “Do you like mathematics? Why?”, he is found neutral about it. He is feeling lazy to study mathematics. The second question were “is mathematics useful in our life?”, he replied ‘yes it is useful in our daily life’. While purchasing goods, making project works of school etc. His view was mathematics is useful in other field too like engineering and medical.

In the same way the question is asked to student E, “Do you like mathematics? Why?”, the students view was dualistic about this. He said like and dislike both. The second question were “Is mathematics useful in our life?”, he said it is useful. It is used in different field like while constructing building, while buying goods, in the case of profit and loss. In nature also mathematics used, e.g. Tree: we can count leafs of tree, there are different shapes like cylinder, angle and circle.

From the above discussion it was found that generally students are positive about the mathematics. They are very interested to solve mathematical problems. Sometimes they are feeling bore with mathematics if they don’t have any idea to start the problem. They are enjoying with mathematical homework when they have clear concept about the mathematical content. They know the use of mathematics in daily

life and further life. They said ‘we and other people are using mathematics in our daily life by knowing and unknowingly’. They mathematics is queen subject. It is used in other fields too; Like: science, medical, engineering and many more. So, Student should take help from teachers and their seniors to make the clear concept about the mathematics and guardians and teachers also should play the supported role.

Motivational and de-motivational factors towards homework

The question asked “Who are helping you to learn mathematics? How they are helping you?”, the student A replied, teachers and friends are helping her to learning mathematics. Teachers are helping in classroom as well as off time of school too if they asked questions. She found very interested to solve mathematical problems with friends. Sometimes they are doing competition to solve mathematical problems themselves. In another question “in which condition you like homework and which condition you feel bore to do homework?”, she replied homework should be given every day but it should be limited. It helps to study more. Homework helping her to get more marks in exam, to think critically about mathematical abstract concept, regularity in study. When homework is too much and very difficult and she doesn’t like study and feeling bore. If homework is more she didn’t get time to play and participating other entertaining activities.

When the same question asked to student B “from whom you are getting help to learning mathematics?”, her reply was as ‘mostly teachers helping me, I’m staying at hostel so how family members will help me but also sometime when I went home my brother helping me. I’m getting help from friends too. I feel very comfortable with friends and they are also helping me’. Finally, when question is asked “in which

condition you like homework and which condition you feel bore to do homework?", she told almost I like homework. She like homework when it is difficult because it helping her to think critically about the questions/subject matter. Homework helping her to get more marks in exam too. She feels bore towards homework only when if it is given extra.

When asked to student C "who are helping you to learn mathematics? How they are helping you?", she said, teachers and friends are helping her to learn mathematics. Friends are helping her while she feels difficult. They are solving mathematical problems by discussing. The fourth question was "in which condition you are enjoying with homework and which condition you are feeling bore?", she replied 'I entertaining with homework when I've clear concept about the content'. Homework helping her to get more marks in exam, therefore she is motivated towards homework. She is found angry about the homework when she tried to solve questions many time but not got answer. But also, she is solving such problems by taking help of teachers and friends. She fond bore when homework is so much.

The answer of the question "who are helping you to learn mathematics?" by student D was teachers, sister and friends. Teachers are helping him individually too. His sister helping him in most of the time at home. His friends are helping when he feels difficult and boring towards homework. When fourth question is asked "in which condition you like homework and which condition you feel bore to do homework?" he replied, I enjoy with homework when it is easy. He told homework should be given every day but limited. And homework should not be given on holidays of festivals. Homework helping him to study more and helping to develop studying habit. He has no any problem to get start homework. He feels bore with homework when he doesn't know how to solve and feel difficult to solve the

problems. Also, he feels bore with homework when he has no time to play games and to participate in entertaining activities due to homework.

The answer of the question “Who are helping you to learn mathematics? How they are helping you?” by student E was mainly teachers helping him. His brother helping him at home and friends are helping at school and out time. Another question was “Do you enjoy with homework? In which condition?” he said generally I enjoy with homework. He found very angry with homework when he didn’t get time to play games due to homework. Homework helping him to study more which is being the way to get more marks in exam for him. He said homework should be given every day and at least one hour because it reminds and realize to study at home.

By analyzing the above result, we conclude that generally students are enjoying with homework. They are taking help to solve mathematical problems from teachers and their seniors. They are getting help from school, home environment and from friends to learn mathematics. They are really positive about the mathematical homework. Homework reminding them for they should have study at home. Homework helping them to get more marks in exam. Also, homework helping them to think critically about the mathematics and reduce the mistakes. They are feeling homework helping them to get more marks. But they don’t like more homework. They are taking more homework as burden. Their common disagree is more homework disturbing in self-study and they are not getting time to involving entertaining activities. Also their common view is more homework and homework at festival periods is mental pressure than learning.

Chapter V

FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

This chapter includes the findings, conclusion, implementation and recommendation for the further study. The conclusion and implementation will be based on the analysis and interpretation of the data in chapter IV.

Findings

After analyzing the data collected from questionnaire and semi structured interview the findings are categorized in four area based on conceptual framework. Which are following below:

Attainment Value

- Most of the student are positive about essentiality of homework in mathematics learning. 83.5% students were accepted the statement.
- Homework helping them to solve mathematical problems by different techniques.
- Mathematical homework helping students to make their thinking capability wide. 66.5% students accepted the statement ‘Homework helps to develop critical thinking’.
- Students are taking as extra load if it is given more. They feel very difficult to manage the time.

Intrinsic Value

- The students view towards enjoying task of homework is probably equal in agree, neutral and disagree. So, concluded that students are not enjoying with homework.

- The students who do not have any problem to start their homework is 37% and 63% are neutral and disagree. So students have problem to get start their homework. Students are liking homework only when if it is easy and they do have clear concept about content.
- Homework helping students to get progress in study.
- Students liked homework every day but it should be limited (1 hour-1.5 hour per day).

Utility Value

- Homework helping to students to get more marks in exam. It is one part of getting more marks in their opinion.
- Homework helping them to study more. It reminding and encouraging them to study at home.
- 83.5% students accepted the statement ‘homework helps to understand mathematical concepts’. They are revising at home the content which they have studied at school which helping them to understand mathematical concept.
- More homework disturbing them in their self-study. They are not getting enough time to involve in critical activities related to mathematics due to extra homework.

Cost Value

- Homework helping students to think critically about the mathematical problems. Most of the students who have participated in interview they liked difficult questions as homework. They want to face the challenges of question and want to do by different techniques, methods.

- 34% students are feeling bore to do homework.
- 53.5% students are agreed about the statement ‘homework is punishment’.
- But also, students are feeling week in mathematics by lack of homework.
- Students are not getting enough time to play and to participate in entertaining activities.

Conclusion

There is a common notion that assigning homework to the student improves their mathematics learning. It’s because it provides an opportunity to the students to practice mathematical problems, which demand a lot of practice to master over it. Here also in overall student’s attitude towards homework is positive. It was found that students have different opinion about different statements. It’s because of every student have his/her own understanding level and they are from different community and different places.

Generally, students are enjoying with homework. Homework reminding them for they should have study at home. Homework helping them to get more marks in exam. Also, homework helping them to think critically about the mathematics and reduce the mistakes. But they don’t like extra homework. They are taking more homework as burden. Their common disagree is more homework disturbing in self-study and they are not getting time to involving entertaining activities. Also their common view is more homework and homework at festival periods is mental pressure than learning.

Finally, really the students have problem to get start the homework and they are enjoying with homework only when if it easy or if they have clear concept about the content. Why students are taking homework as burden and felling bore with

homework it is the matter of research. So, assigning homework by appropriate and scientific approach by understanding real situation, necessity and student's psychology will be better and fruitful in mathematics learning.

Implications of the Research

The result of this study may lead valuable insight into the improving the national achievement of the student in mathematics and giving the worth in applying the active learning for mathematics in the classroom. The following are the significant implication:

- The national curriculum of mathematics should be focused on use of homework in mathematics learning and differentiated instructions regarding homework in mathematics.
- Mathematics teacher should be the resource person for the student. They have to good performers in mathematics.
- Technology should be used widely in teaching and learning process of mathematics. The technology makes easy to assign homework, submission and check with instant feedback.
- Homework should be assigned by appropriate way by understanding necessity and students' psychology.
- Homework should be taken as enjoying and supporting task in mathematics learning by students.

Recommendation for the Further Research

The conclusion of the study may not have generalized to all students due to limitation area contained in study. The following recommendations are identified for future research regarding homework of mathematics.

- Similar study should be carried out with large sample and various schools of different parts of Nepal.
- Such study should be made for lower level students.
- This study should be conducted on large scale and longitudinal research design can be used.
- This study examined just students' attitude towards homework at secondary level. It is better to include teachers in such studies.
- Each motivational factor is important for influencing students' homework doing habits, therefore these factors can be studied separately.
- The further research could conduct observation and experimental study.

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Appendix- A

A Survey

Name of school: ……... Date: ……

School type: Public ☐ Institutional ☐ Gender: Male ☐ Female ☐

Please read the given statements very carefully and tick (✓) the best as you think.

	S.N.	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Attainment value	1	Homework is essential in mathematics learning					
	2	Homework helps to develop good learning techniques					
	3	Homework helps to develop critical thinking					
	4	Homework helps to reduce the mistakes					
	5	Homework is extra-load					
	6	It is difficult to					

		manage time for homework					
Intrinsic Value	7	I enjoy with homework					
	8	I have problem to get start my homework					
	9	I like homework only when if it is easy					
	10	Homework helps to get progress in study					
	11	Homework gives mental pressure than learning					
	12	Homework should be given everyday					
Utility Value	13	Homework helps to get more marks in exam					
	14	Homework helps to meet short term target					
	15	Homework					

		helps to study more					
	16	Homework helps to understand mathematical concepts					
	17	Homework is not useful in mathematics learning					
	18	Homework disturbs in self-study					
Cost Value	19	Homework propound to think critically					
	20	I feel bore to do homework					
	21	Homework is punishment					
	22	Homework is unnecessarily loss of time					
	23	I’m weak in mathematics by lack of homework					
	24	I’m not getting enough time to play due to homework					

Appendix-B

1) Do you like mathematics? Why?
2) Is mathematics useful in our life? Your view.
3) Who are helping you to learn mathematics? How they are helping you?
4) In which condition you are enjoying with homework? And in which condition feeling bore?