Chapter I

INTRODUCTION

Background of the study

In psychology, an attitude refers to a set of emotions, beliefs and behaviors to a particular object person thing or event. Attitudes are often the results of experience or upbringing and they can have a powerful influence over behavior. While attitudes are enduring, they can also change.

The study of attitude is a key and sometimes controversial issue within social psychology. Petty & Cacioppo define an attitude as “a general and enduring positive or negative feeling about some person, object or issue’.

An attitude is an evaluation of the feelings an individual has towards something. They covey what we think and how we feel about an object, target or referent. These referents may be specific and tangible or abstract and intangible. When the object of the attitude is important to the person, the evaluation of the object produces an affective or emotional reaction.

Attitudes remain fairly stable and permanent throughout our life. Attitudes generally only apply so socially significant objects. Attitudes are generalizable.

One Component Model: An attitude consists of affect towards or evaluation of the object. Two Component Model: An attitude consists of a mental readiness to act. It also guides evaluative responses. Three Component Model: An attitude consists of cognitive, affective and behavioral components. https://www.verywellmind.com/

Explicit attitudes are evaluations that people can report consciously. Implicit attitudes are automatic evaluative responses to a target, which may occur without awareness. https://www.psychology 101.wordpress.com

There is now a wide spread recognition that affective factors play a critical role in teaching and learning of mathematics. A number of researchers have investigated the relationship between affective and cognitive domain. In general attitudes, beliefs and emotions are the major descriptors of the affective domain in mathematics education. Traditionally mathematics education researchers have taken the relationship between attitude towards mathematics and achievement in mathematics as a major concern in their research work. Aiken (1970) referred to attitude as a learned predisposition or tendency on part of an individual to respond positively or negatively towards some object, situation, concept or another person. Neal (1969) defined attitude towards mathematics as a tendency to engage in or avoid mathematical activities, a belief that one is good or bad in mathematics is useful or useless.

In both theory and practice a strong relationship between attitudes towards mathematics and achievement in mathematics has been taken implicitly for a long time. Hazma Mukhtar (1952) demonstrated the relation of motivational and attitudinal factors to the problems of learning mathematics. Behr A N (1973), Rajput (1984), Singh(19860, found attitudes to be related to mathematics achievement. Factors

predominated among school failures studied by Jain (1979) were mathematical, background, attitude towards mathematics and low motivation. Tulia (1979) found aptitude for mathematics and achievement in mathematics and achievement in mathematics were significantly and positively related to mathematical creativity.

Students' concerns about mathematics can significantly affect their ability to learn and understand the subject. Furthermore, their anxieties and attitudes may greatly affect how they perceive their own mathematical competence (Hopko R D 1998). For instance, students may perceive mathematics as an incomprehensible set of abstract procedures and method to follow, not being aware that there are reasons underlying these methods. Frustration due to the lack of in-depth understanding may discourage Students from pursuing studies in mathematical sciences, through observation and interviews with high school students as they were solving. www.shodhganga.inflibnet.ac.in>bitstream

Attitudes towards Mathematics

Most educators want students to enjoy learning mathematics; however, many student's express negative attitudes towards mathematics. At the simplest level, attitude toward mathematics refers to the liking or disliking of mathematics (Ma & Kishor 1979), but also includes self-confidence in mathematics and perceived usefulness of mathematics. Unlike math anxiety, which disrupts learning in real-time, attitudes toward mathematics influence how students approach learning. That is, when students have confidence in their mathematics skills and enjoy and see the value of mathematics, they tend to have higher levels of engagement and put forth more effort, which in turn makes them more silent learners (Wey field &Eccles, 2000). Importantly, negative attitudes toward mathematics may developmentally precede math anxiety (Ahmed, Minnaert, Kuyper, & Vander Werf, 2012, Casanova et al. 2016, Ma & Xu, 2004) whereas positive attitudes may help manage or reduce the negative effects of math anxiety (Galla &Wood 2012). Thus attitudes toward mathematics inform practitioners and parents about students' approach to learning mathematics and may serve as an early indicator of math anxiety. This is an important consideration for students with MLD, who tend to report more negative attitudes toward mathematics compared to their typically achieving peers (Hanich & Jordan, Zelek, 2004)

Although many students enter school with positive attitudes toward mathematics, some students as young as prekindergarten have been observed to be disinterested in mathematics (Fisher, Dobbs-Oates, Doctor off & Arnold, 2012) https//www.mydigitalpublication.com>article

Is there meaningful learning of mathematics at primary level is there any confusion of content? What is the role of teaching materials for meaningful learning theory for mathematics teaching at primary level? Does a teaching material support David P. Ausubel's meaningful learning theory?

In the same way, is there teaching material connect with Dienes' views on learning mathematics? There are six stages of learning mathematical concept (Free play stage, games, searching for commonalities, representation symbolization and formalization).

How primary level mathematics teacher connect teaching materials with Dienes learning principle? How much time spent the teacher and students on teaching materials at classroom?

Female mathematics teachers are few in secondary level but primary level nearly equal number of male and female teacher.

Before going to study about this topic the researcher analyzed about the result of primary level students and teachers teaching learning activities at classroom in particular to Bhumlu Gaun Palika of Kavrepalanchok district Ninety percent of students were failed in mathematics but all of them upgraded. Almost primary level mathematics teacher is not permanent. Salary is not sufficient for teacher. So the researcher concluded that to find the attitude of mathematics teacher toward the use of teaching materials.

Teaching materials clear about the subject matter. It creates real life situation for students. It is curious for students. Teaching materials provide romantic classroom environment. Then the researcher convinced that this is recent problem of primary

level mathematics teachers as well as contemporary society also. Because of those reasons the researcher selects this topic to study.

Statement of the Problem

The study was concerned with the attitude of primary level mathematics teacher of Vhumlu and Chauri Deurali Gaun Palika & Banepa Municipality of Kavrepalanchok district. But in a single research, we cannot find the answer of these various questions related to the topic. This study is mainly concerned with the determination of attitude of mathematics teachers toward the use of teaching materials. The study was intended to answer the following questions:

- What is the attitude of primary level mathematics teachers toward the use of teaching materials?
- What are the differences between the attitudes of urban and rural primary level mathematics teacher about teaching materials?
- What are the differences between the attitudes of male and female primary level mathematics teachers?

Objectives of the Study

The main objective of this study was

- To find out the attitudes of primary level mathematics teacher toward use of teaching materials.
- To compare the attitudes of urban and rural primary level mathematics teacher.
- To compare the attitudes of male and female primary level mathematics teacher.

Research Hypothesis

Research hypothesis for the study ware as follows:

- There is no significant difference between the attitudes of urban and rural primary level mathematics teacher on mathematics.
- There is no significant difference between the attitudes of male and female primary level mathematics teacher on mathematics.

Statistical Hypothesis

Statistical Hypothesis is the basis of research hypothesis for the study ware formulated as follows:

- H_o: $\mu_1 = \mu_2$(Null hypothesis)

  H_1: $\mu_1 \neq \mu_2$ (Alternative hypothesis)

Where,μ_1 and μ_2 are the parametric means of attitudes of urban and rural primary level mathematics teachers towards use of teaching material.

- H_o: $\mu_3 = \mu_4$(Null hypothesis)

  H_1: $\mu_3 \neq \mu_4$ (alternative hypothesis)

Where,μ_3 and μ_4 are the parametric means of attitude male and female primary level mathematics teachers towards use of teaching material.

Significance of the Study

This study tried to find out the attitude of teachers toward the use of teaching materials. The study was concerned with the views of teacher on teaching materials. The study has following specific significance.

- This study would help to improve teaching learning process in primary level.
- This study would help to dropout problem.
- It would help to obtain objective of education.
- It would be helpful for further research in the area of teaching materials.

Limitations of the Study

This study was limited on the community school of Vhumlu and Chauri Deurali Gaun Palika and Banepa municipality of Kavrepalanchok district.

- This study was limited to the classroom activity, teaching approach, content, textbook of mathematics, school environment.
- The variable such as academic qualification, age level, and experience of teachers, school environment, and school management etc. of the sample affecting the attitudes would not be controlled.
- This study is based on only one group (90 teacher) of community school from Kavrepalanchok district.

Definition of the Terms

Attitude: Attitudes is a mental set or disposition, readiness to respond and psychological basis of attitudes, their performance, their learning nature and their evaluative character.

Attitude Scale: It is an inquiry or scale used to obtain the measure of an attitude or belief of an individual towards some phenomena (Best 1959).

Community School: School that are established and sponsored by government of Nepal.

Urban teacher: Teacher, he/she is teaching at municipality.

Rural teacher: Teacher, he/she is teaching at Gaun Palika.

Primary Level Mathematics Teacher: Those teachers who facilitated the mathematics at Primary Level of Community School.

Chapter II

REVIEW OF RELATED LITERATURE

A review of related literature provides the researcher in making his problems more realistic, precise researchable meaningful, specific, purposeful and fruitful. So literature provides authentic and strong knowledge for new research. Mainly the literatures are previous thesis, books, journals and wave sites.

In this regard the following are the related Empirical Literature in this study:

Hann (1961), states about "The influence of Teacher on Student's Attitudes towards Mathematics". He expressed that the large number of teachers who dislike or fear mathematics had become a factor in children's attitude, towards the subject. So children are affected by teacher’s attitudes. Like all other attitudes, dislike of mathematics is easily communicated to children either directly or unconsciously. This is an environmental effect of math on child

Amatya (1978), states about "A Study of the Effectiveness of Teaching Mathematics with and without the use of Instructional Materials". The study selected by using systematic sampling and the experiment was conducted for four weeks' duration. The t-test was applied to conclude that the mean difference was significant at 0.05 levels. The conclusion was that the performance of students taught with the use of instructional materials was significantly improved when compared with the performance of the students taught without the use of instructional materials.

Pandit R.P. (1980), study about "The Attitudes of the Secondary School Students and their Parents towards Mathematics and Other Subjects of Instruction" and focused that the student demonstrated position attitudes towards mathematics as

subject of study at school level. The mean measures of boy's attitudes towards mathematics subject were greater than that of the girls.

Bhatt (2015), study about, "Attitudes of secondary level students and teachers toward arithmetic" with the objective to find out attitude of teacher and students toward arithmetic, to compare the attitude of boys and girls. His study was conducted on 300 students of grade ix of Baitadi. He concluded that the following result:

- The attitudes of the secondary level students and mathematics teachers were positive towards arithmetic.
- There were gender differences in attitude towards arithmetic's.
- Mean attitude score of students slightly greater the teachers.

Ghimire (1997), study about "A Study on Factors Affecting Teaching/Learning Mathematics at Secondary Level". With the objective to study the factors affecting in learning of school in terms of school environment, family background, motivational factors physical facilities; interest of the learns, instructional materials. The tools for the study were administered to the sample of ninety students and t-test was applied. He concluded the following result:

- Home environment affects more to the subjects or rural areas and girls were affected more than boys.
- The students of Kathmandu were more motivated to study mathematics than that of Arghakhanchi and Chitwan.

CERID (2001), study about, "A Study on the Feasibility of Parallel Question Papers for the SLC Examination". It concluded that the use of parallel tests was found to be feasible in SLC examination. This study also says that the use of parallel tests

was found to minimize the use of unfair means in the examination hall. It also observed that examinees found it difficult to talk to the alongside examinees, glance at other's answer books, use cheat paper and receive help form invigilators.

Bhattarai (2005), study about "Mental Arithmetic Efficiency of the Students of Grade 8" with the objective to compare the mean arithmetic skills with written arithmetic skills of students in square and square rot, ratio and proportion and percentage with taking four public schools for sample. The tools for the study were administered to the sample of 52 students and t-test was applied. He concluded the following result:

- There is significant difference between the mental arithmetical skills and written arithmetical skills of student of grad 8 in square and square root.
- There is a significant difference between mental and written arithmetical skills of students of grade-8 in "Ratio and Proportion".
- There is significant difference between mental and written arithmetical skills of students of grade 8 in "percentage".
- There is no significant difference between girls and boys of grade-8 in mental arithmetic efficiency.

Parajuli (2013), study about "Attitude of primary level mathematics teachers towards teaching mathematics and their classroom practices". He studied about thirty primary school out of three hundred fifty primary school of Syangja district with the objective to identity the teacher's attitude towards teaching mathematics and to analyze the relation between teacher's attitude toward teaching mathematics and their classroom practice. Findings and conclusion of his study were as follows:

- There was positive attitude of primary level mathematics teachers towards teaching mathematics.
- The relationship between primary level mathematics teacher attitude and their classroom practice was moderately correlated.

Adhikari (2001), study about Attitudes of lower secondary level students and teachers towards arithmetic with the objectives (i) to find out attitudes of lower secondary level students towards arithmetic, (ii) to compare boys and girl's attitudes towards arithmetic (iii) to find out the attitude of lower secondary mathematics teacher towards arithmetic (iv) to compare the students and teacher's attitude towards arithmetic. He used $\chi 2$ and t-test of the sample and finding of the research as follows:

- The students studying in lower secondary level and their mathematics teacher had positive attitude towards arithmetic.
- No gender difference in attitudes towards arithmetic.
- The mean attitude score of boys towards arithmetic slightly greater than that of girls.
- The mean attitude score of teachers towards arithmetic was slightly greater than that of their students.

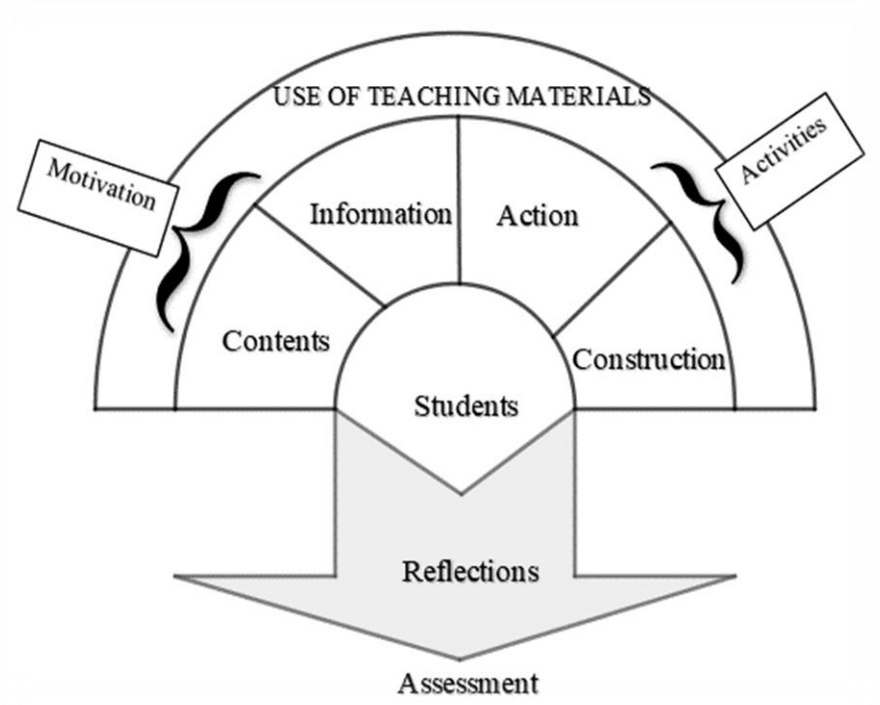
Judith (1994), on his research paper states " Shedding some new light or old truths: student's attitudes to school in terms of year level and gender" indicates that middle school and high school girl have positive attitude towards school but negative attitude towards mathematics. It focuses on the gendering 'the separation of boys and girls of Australian school' through the study of seventh, eighth and tenth graded in co-educational school programs as well as girl only schools despite some authors belief that separating boys and girls, for mathematics improves girls attitude towards

mathematics, the result towards mathematics, the result indicates that even when girl are taught in all-girls school they still have negative attitude towards mathematic with regards to teachers. The paper suggests that separating boys and girls during mathematics instruction does not improve girl's negative attitude towards mathematics.

Upadhyaya (2014), In the history of mathematics through different civilization, great reformation and restructuring of the school level mathematics curricula have been taking place in order to meet the needs of the students, expectations of the parents, society, and the as the whole. Nonetheless, mathematics contents and methods have not been completely child friendly, and there is a strong dislike of the subject among school students. In this context, a question that has always stricken the mind is "Can we touch, feel and see mathematics"

Conceptual Framework

In using teaching materials based instruction, student is a center point of learning process. Each of the scenarios had been completed into five terms, contents, information, action; construction and reflection. Teachers are effected by from motivation. So teachers are ready for making and arranging teaching materials. Contents and information inspire to motivate the teacher to make teaching materials. Teacher's activities show the action and construction on use of teaching materials.



Source: Conceptual framework of use of teaching material google.com

The above conceptual framework demonstrated that teaching materials can be used in each phases of teaching learning process such as in motivation activities as well as reflection. Teaching materials should be related to contents. Teaching materials motivate to students as well as teacher. Difficult topics are facilitated by use of teaching materials. The output of teaching materials shows the achievement, personality, and understanding of students.

Chapter III

METHODS & PROCEDURES

The chapter contains procedure to be done to achieve the objective of the study. This study was based on mixed method research design in which the researcher was used survey and descriptive research design.

Research Design

Young P.V. (1988), "The research design is a logical and systematic planning and direction of pieces of research". Kerlinger, F.N. (1993) states that, "Researches design is that plan, structure and strategies of investigation conceived so also obtain answer to research questions and to control variance." Kothari, C.R. (1985), "Research design is the conceptual structure within which research is conducted. It constituted the blue print for the collection measurement and analysis of data".

Simple research design is an overall plan or scheme. So the researcher was applying quantitative, descriptive research design to find the attitude of primary level mathematics teachers towards the use of teaching materials.

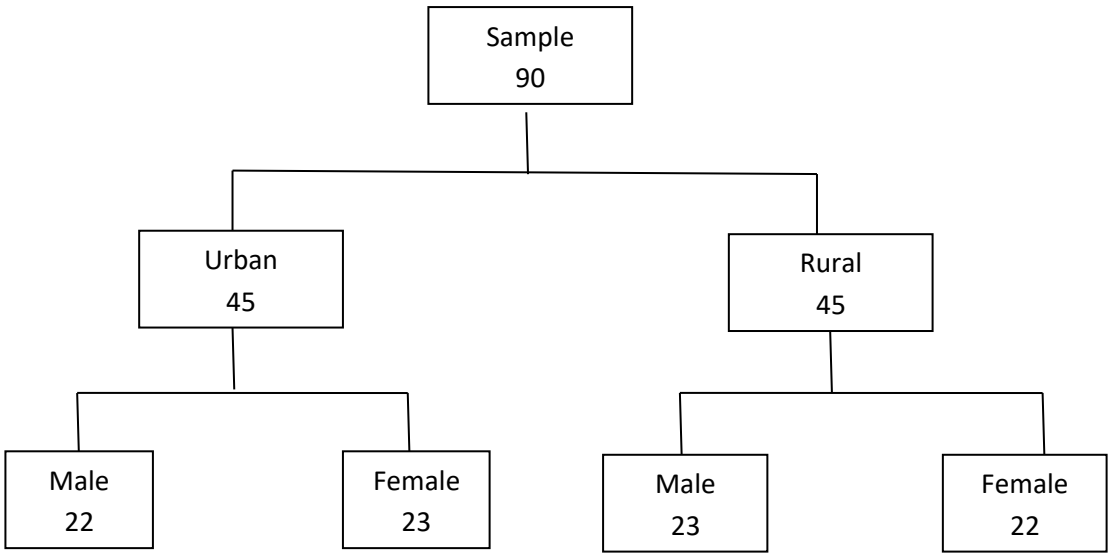
Survey research is probably best adapted to obtaining personal and social facts, belief and attitude. So survey is appropriate for this research.

Population of the Study

All the primary level mathematics teachers of Kavrepalanchok District were considering as population of the Study. All teachers have not same qualification. They are different age groups. Some of them are disabling. They are from different regions. Some of them have no interest to teach mathematics but teaching at school. All teachers demand was to take refreshment training.

Sample Procedure and Sample Size

The researcher taken Bhumlu and Chauri Deurali Gaun palika as a rural region and Banepa Municipality as an urban region for a sample. In this research researcher was taken 45 mathematics teachers from community schools from Vhumlu and Chauri Deurali Gaun Palika of Kavreplanchok district. 23 males and 22 female teacher among them community schools Vhumlu and Chauri Deurali Gaun Palika and 45 mathematics teachers was included from Banepa Municipality where 22 male and 23 female teachers are selected from community school was taken `for data collection procedure by purposive sampling method.



Framework of sampling procedure

Tools of the Study

To fulfill the objectives questionnaire is the instrument of this study. Interview is also conducted to few numbers of teachers.

Questionnaire

Form of questionnaire was developed for primary level mathematics teachers. The researcher was constructed the questionnaire with help of previous thesis on the basis of above theoretical understanding. They were structured closed format, and rating scale type of question by the help of supervisor and with referenced form previous thesis. The questionnaire consisting of 25 statements was development from the guidelines of affective objective/categories developed by F. H. Bell (1971) based on David classification of system.

For each item of the questionnaire, the Likert sale of strongly agree, agree, disagree and strongly disagree were used. The statements of the questionnaire were development from*, "the taxonomy of affective educational objectives" Which* was developed by David Krathwohl. Affective domain as mention by F.H.Bell, 1971 has been categorized into 5 major affective objectives: Receiving - awareness, willingness to receive, controlled of selection attention, Responding - acquiescence in responding, willingness to respond, satisfaction in responding, valuing, accepting a value, perfecting a value, commitment to a value Organization- conceptualization of a value, organization of a system of value Characterization-generalized set, characterization.

Reliability and Validity of Tools

To predict reliability of questionnaire researcher was used the equivalent form method. For validity the researcher determine questionnaire in which each question was related to objectives of the research. The research questionnaire is valid. It was based upon the previous thesis as: The study of Lower Secondary Level Students and Math teachers towards Arithmetic" by Adhikari (2001), "Attitudes of secondary level students and teachers towards Arithmetic" by Bhatt, (2015), "Attitudes toward using

instructional material primary mathematics teacher" by Kharel (2006). The questionnaire was totally based upon the theoretical understanding and objectives of the study also. The questionnaire was prepared according to the guideline of supervisor.

Data Collection Procedure

This research is based on mixed method research design, so the primary level mathematics teachers were fill up attitude scale and the researcher collects these scales. The collected data was tabulated by using the Likert five point scales. There were positive and negative types of statements in the questionnaire. According to Likert five points scale for favorable statement will be make as 5,4,3,2,1.

Table I

Meaning of Ratings	Ratings
Strongly Agree	5
Agree	4
Neutral	3
Disagree	2
Strongly Disagree	1

Data Analysis Procedure of the Questionnaire

The obtained data were analyzed and interpreted with the help of following statistical techniques; mean weightage, $\chi 2$ test and z- test

- Mean weighted is used to locate the central position of the responses to the statement of teachers as a whole in the rating scale. Each statement was

studied in terms of whether the teachers' attitudes are up to the index or not. If the calculated mean weightage is greater than three, then it is concluded that the statement indicates the positive and it is strongly favorable to it. If the mean weightage is less than or equal to three, then it is less favorable

- After quantifying the collective data, the researcher analyzed the collected data by applying χ^2 test for each item to find the attitude of teachers and calculating the mean and standard deviation. The two tailed z- test was use to compare the attitude of urban and rural as well as male and female mathematics teachers towards the responses to the statements. The differences were tasted at α=0.05 level of significance.

Interview

An interview is defined as a directed conversation between an investigator and an individual/ a group of individual in order to gather information. It can occasionally be conducted through telephone-mail and such other electronic media. The main purpose of interviewing an individual is to find out their personal feelings; likes and dislikes attitudes, opinions, experiences etc. about certain issues, events, situation or phenomena (*Best & Kahn 10th edition).* The researcher used semi structure interview in which pre-determined sets of questions were used.

Validation of interview

Before finalizing the interviews, it was piloted on four primary level mathematics teachers to check the appropriateness of items. After piloting some question were being modified, some were rejected and some were corrected. Finally, consulting with supervisor and other researchers, the interview was ready for final administration.

Procedure of Data Collection of Interview

For data collection, the researcher visited each of the sample teachers. After explaining the purpose of visit, the researcher requested each of the teachers of the school, included in the sample to give response honestly. The researcher clarified any confusion that arose in understanding the statements.

Data Analysis Procedure of Interview

To determine the attitude of the teachers towards use of teaching materials, all information was collected from primary sources. At the time of study, the researcher had visited in the field and primary data. Descriptive analysis was applied for the analysis and interpretation of data.

Chapter IV

ANALYSIS AND INTERPRETATION

The analysis and interpretation is the main part of the research. This chapter presents statistical analysis of collective data. The interested people can know the real finding of research from the analysis part. Analysis part gives the real vision of the research. So the analysis and interpretation is very important in this study.

This chapter deals with the statistical and qualitative analysis and interpretation of the data with the help of two set of instruments.

The researcher had tabulated, organized, analyzed and interpreted the raw data conclusion and valid generalization.

The data for the study has described in chapter third were collected from primary level mathematics teachers of Kavrepalanchowk district of the academic year 2075. The collected data were tabulated, organized, analyzed and interpreted by appropriate statistical techniques for the attainment of the objectives and verification of the hypothesis as stated in chapter first.

The result of analysis was done together with their interpretation. The analysis of the study was carried out under the following major headings which correspond to the objectives of the study.

Urban and rural primary mathematics teacher's attitude in using teaching materials.

Urban primary mathematics teacher's significance level in using teaching materials.

Rural primary mathematics teacher's significance level in using teaching materials

Comparative analysis of urban and rural primary mathematics teaches attitudes in using teaching materials.

Comparative analysis of male and female primary mathematics teacher's attitudes in using teaching materials.

Urban and rural primary mathematics teacher's attitude in using teaching materials.

For the analysis of the items, weightage of 5, 4,3,2,1 are assigned to statement: strongly agree, agree, neutral, disagree and strongly disagree respectively. For the statement opposing to this point of view, the items are scored in the opposite order. Mean weightage was calculated.

Total score of five point Likert scale is 15, thus its average score is 3. If the calculated index is greater than three, then it is concluded that the statement contains in strong favor to the attitudes. If the index measure is less than or equal to three; then it is weak favor to the attitudes. The work involved in the computation of attitude score and mean weightage of 90 teachers is given in (Appendix-B). The summary of results has been given in Appendix-B.

It is advantage to use teaching material in mathematics teaching. Mean weightage response of this statement was found to be 4.61. Similarly, teacher should have the knowledge to use teaching materials in classroom. Mean weightage response of this statement was found to be 4.6. Teacher should have the skill to use teaching

materials in classroom. Mean weightage response of this statement was found to be 4.58. Manipulative materials are useful to teach in exploratory level. Mean weightage response of this statement was found to be 4.37. Most of the time should be given to making and using teaching materials. Mean weightage response of this statement was found to be 4.09. The knowledge about the importance of teaching material. Mean weightage response of this statement was found to be 4.56. First priority should be given in using teaching materials in the beginning of new subject matter. Mean weightage response of this statement was found to be 4.44. Training should be given to each mathematics teacher about using teaching materials. Mean weightage response of this statement was found to be 4.44. Teaching materials helps to teaching for understanding. Mean weightage response of this statement was found to be 4.72. Teaching materials are useful to teaching for performance. Mean weightage response of this statement was found to be 4.47. Teaching materials is a useful tool to understand mathematical facts. Mean weightage response of this statement was found to be 4.37. Self-made materials develop the positive appreciation towards mathematics teaching and feel of glory. Mean weightage response of this statement was found to be 4.59. The students are curious and active in mathematics teaching when using teaching materials. Mean weightage response of this statement was found to be 4.49. Each school should have a mathematical laboratory. Mean weightage response of this statement was found to be 4.67. A certain amount of money /budget should be differentiating for the management of teaching materials in local level. Mean weightage response of this statement was found to be 4.39. The teacher should stimulate to students in manipulating teaching materials. Mean weightage response of this statement was found to be 4.31. Use of teaching materials is useful and important to Multiple- intelligence classroom. Mean weightage response of this statement was

found to be 3.99. Use of teaching materials is important in mathematics teaching rather than other subjects. Mean weightage response of this statement was found to be 3.92. It is behavioral to use teaching material in every mathematics classroom in term of cost. Mean weightage response of this statement was found to be 3.84. It is behavioral to use teaching materials in every mathematics classroom. Mean weightage response of this statement was found to be 3.8. I am very favor towards using teaching material. Mean weightage response of this statement was found to be 4.39. Teachers feel fun and enjoy in using teaching materials. Mean weightage response of this statement was found to be 4.61. Teacher should make an organized teaching about use of using teaching materials. Mean weightage response of this statement was found to be 4.72. It is behavioral teaching material in every mathematics classroom in terms of time. Mean weightage response of this statement was found to be 3.94. It is behavioral to use teaching materials in every mathematics classroom in terms of classroom. Mean weightage response of this statement was found to be 4.21.

Urban primary mathematics teacher's significance level in using teaching materials.

Altogether there were 45 primary mathematics teachers taken from 22 male and 23 female teachers were selected from Banepa Municipality of Kavrepalanchowk district. The following table presents the Chi-square value of twenty-five positive statements included in the questionnaire for the urban primary teachers to determine their attitudes in using teaching materials at the 0.05 level of significance. Where the degree of freedom=(r-1) (c-1), r=1(no. of row) and c=5(no. of column).

Table No. 1

Chi-square value of statements in administered attitude scale to urban teachers

S.N	Statement	Total score	x^2- Value	Significance
1	It is advantage to use teaching material in mathematics teaching.	210	80.00	S
2	Teacher should have the knowledge to use teaching materials in classroom.	209	76.89	S
3	Teacher should have the skill to use teaching materials in classroom.	207	72.00	S
4	Manipulative materials are useful to teach in exploratory level.	198	50.89	S
5	Most of the time should be given to making and using teaching materials.	173	28.67	S
6	The knowledge about importance of teaching material.	200	52.22	S
7	First priority should be given in using teaching materials in the beginning of new subject matter.	195	46.67	S
8	Training should be given to each mathematics teacher about using teaching materials.	205	68.89	S
9	Teaching materials helps to teaching for understanding.	215	102.22	S
10	Teaching materials are useful to teaching for performance.	207	78.67	S
11	Teaching materials is a useful tool to understand mathematical facts.	203	60.89	S

12	Self-made materials develop the positive appreciation towards mathematics teaching and feel of glory.	202	57.56	S
13	The students are curious and active in mathematics teaching when using teaching materials.	205	68.89	S
14	Each school should have a mathematical laboratory.	215	27.00	S
15	A certain amount of money /budget should be differentiating for the management of teaching materials in local level.	210	80.00	S
16	The teacher should stimulate to students in manipulating teaching materials.	210	80.00	S
17	Use of teaching materials is useful and important to Multiple-intelligence classroom.	185	36.78	S
18	Use of teaching materials is important in mathematics teaching rather than other subjects.	190	46.22	S
19	It is behavioral to use teaching material in every mathematics classroom in term of cost.	180	46.67	S
20	It is behavioral to use teaching materials in every mathematics classroom.	177	50.67	S
21	I am very favor towards using teaching material	205	68.89	S
22	Teachers feel fun and enjoy in using teaching materials.	215	102.22	S

23	Teacher should make an organized teaching about use of using teaching materials.	220	135.56	S
24	It is behavioral teaching material in every mathematics classroom in terms of time.	195	46.67	S
25	It is behavioral to use teaching materials in every mathematics classroom in terms of classroom.	195	46.67	S

The result in table 1 shows that the χ^2 –values of 25 statements out of 25 statements are significant at 0.05 levels because the χ^2 –value of 25 statements is greater than the critical value. This implies that there was positive attitude of students toward the use of teaching materials.

It is also exposed from the table of Appendix-C variation in the χ^2 –values of significant statements.

Table 1 show that the chi-squire value 135.56 at 0.05 level of significance, of the statement “Teacher should make an organized teaching about use of using teaching material” is highly significant. The statement “Teaching materials helps to teaching for understanding.” and” Teachers feel fun and enjoy in using teaching materials.” are significant with chi- square value 102.22 at 0.05 level .The statements “It is advantage to use teaching material in mathematics teaching.”, “A certain amount of money /budget should be differentiating for the management of teaching materials in local level.” and “ The teacher should stimulate to students in manipulating teaching materials” are significant with chi- square value 80 at 0.05 level. The statement “Teaching materials are useful to teaching for performance.” are significant

with chi-square value 78.67 at 0.05 level. The statement “Teacher should have the knowledge to use teaching materials in classroom.” is significant with chi-square value 76.89 at 0.05 level. The statement “Teacher should have the knowledge to use teaching materials in classroom.” Is significant with chi square value 72 at 0.05 level. The statement “Training should be given to each mathematics teacher about using teaching materials, the students are curious and active in mathematics teaching when using teaching materials and I am very favor towards using teaching material” are significant with chi-square value 68.89 at 0.05 level. The statement “Teaching materials is a useful tool to understand mathematical facts” is significant with chi-square value 60.89 at 0.05 level. The statement “Self-made materials develop the positive appreciation towards mathematics teaching and feel of glory” is significant with chi-square value 57.56 at 0.05 levels. The statement “The knowledge about of importance of teaching material.” is significant with chi-square value 52.22 at 0.05 levels. The statement “Manipulative materials are useful to teach in exploratory level” is significant with chi-square value 50.89 at 0.05 levels. The statement “It is behavioral to use teaching materials in every mathematics classroom” is significant with chi-square value 50.67 at 0.05 levels. The statement “First priority should be given in using teaching materials in the beginning of new subject matter, It is behavioral to use teaching material in every mathematics classroom in term of cost, it is behavioral teaching material in every mathematics classroom in terms of time and it is behavioral to use teaching materials in every mathematics classroom in terms of classroom.” are significant with chi-square value 46.67 at 0.05 level. The statement “Use of teaching materials is important in mathematics teaching rather than other subjects” is significant with chi-square value 46.22 at level. The statement “Use of teaching materials is useful and important to Multiple- intelligence classroom.” is

significant with chi-square value 36.78 at 0.05 levels. The statement “Most of the time should be given to making and using teaching materials” is significant with chi-square value 28.67 at 0.05 level.

Rural mathematics teacher's significance level in using teaching materials.

Altogether there were 45 primary mathematics teachers taken from 23 male and 22 female teachers were selected from Bhumlu and Chauri Deurali Gaun palika of Kavrepalanchowk district. The following table presents the Chi-square value of twenty-five positive statements included in the questionnaire for the rural primary teachers to determine their attitudes in using teaching materials at the 0.05 level of significance.

Table No. 2

Chi-square values of statements in administered attitude scale to rural teacher

S.N	Statement	Total score	x^2- Value	Significance
1	It is advantage to use teaching material in mathematics teaching.	205	68.89	S
2	Teacher should have the knowledge to use teaching materials in classroom.	205	68.89	S
3	Teacher should have the skills to use teaching material in classroom.	205	68.89	S
4	Manipulative materials are useful to teach in exploratory level.	195	46.67	S
5	Most of the time should be given to making and using teaching materials.	185	35.56	S

6	The knowledge about importance of importance of teaching material.	210	80.00	S
7	First priority should be given in using teaching materials in the beginning of new subject matter.	205	68.89	S
8	Training should be given to each mathematics teacher about using teaching materials.	195	46.67	S
9	Teaching materials helps to teaching for understanding.	210	80.00	S
10	Teaching materials are useful to teaching for performance.	195	46.67	S
11	Teaching materials is a useful tool to understand mathematical facts.	190	35.56	S
12	Self-made materials develop the positive appreciation towards mathematics teaching and feel of glory.	211	83.56	S
13	The students are curious and active in mathematics teaching when using teaching materials.	199	49.11	S
14	Each school should have a mathematical laboratory.	205	68.89	S
15	A certain amount of money /budget should be differentiating for the management of teaching materials in local level.	185	35.56	S
16	The teacher should stimulate to students in manipulating teaching materials.	178	23.11	S
17	Use of teaching materials is useful and important to multiple-intelligence classroom.	174	18.00	S

18	Use of teaching materials is important in mathematics teaching rather than other subjects.	163	9.78	S
19	It is behavioral to use teaching material in every mathematics classroom in term of cost.	166	18.00	S
20	It is behavioral to use teaching materials in every mathematics classroom.	165	18.89	S
21	I am very favor towards using teaching material	190	35.56	S
22	Teachers feel fun and enjoy in using teaching materials	200	52.22	S
23	Teacher should make an organized teaching about use of using teaching materials.	205	68.89	S
24	It is behavioral teaching material in every mathematics classroom in terms of time.	160	30.00	S
25	It is behavioral to use teaching materials in every mathematics classroom in terms of class control.	184	50.89	S

The result in table 2 shows that the χ^2 –values of 25 statements out of 25 statements are significant at 0.05 levels because the χ^2 –value of 25 statements is greater than the critical value. This implies that there was positive attitude of teacher towards teaching materials. It is also exposed from the table of Appendix –D variation in the χ^2 –values of significant statements.

Table 2 shows that the chi-squire value is 83.56 at 0.05 level of significance; of the statement “Self-made materials develop the positive appreciation towards mathematics teaching and feel of glory” is highly significant. The statement “The knowledge about of importance of teaching material and teaching materials helps to teaching for understanding” are significant with chi-square value 80.00 at 0.05 level. The statement “It is advantage to use teaching material in mathematics teaching, teacher should have the knowledge to use teaching materials in classroom, teacher should have the skills to use teaching material in classroom, first priority should be given in using teaching materials in the beginning of new subject matter, each school should have a mathematical laboratory and teacher should make an organized teaching about use of using teaching materials” are significant with chi-square value 68.89 at 0.05 level. The statement “Teachers feel fun and enjoy in using teaching materials” is significant with chi-square value 52.22 at 0.05 level. The statement “It is behavioral to use teaching materials in every mathematics classroom in terms of classroom” is significant with chi-square value 50.89 at 0.05 level. The statement “The students are curious and active in mathematics teaching when using teaching materials” is significant with chi-square value 49.11 at 0.05 levels. The statement “Manipulative materials are useful to teach in exploratory level, teaching materials are useful to teaching for performance and training should be given to each mathematics teacher about using teaching materials” are significant with chi-square value 46.67 at 0.05 level. The statement “Most of the time should be given to making and using teaching materials, teaching materials is a useful tool to understand mathematical facts, a certain amount of money /budget should be differentiating for the management of teaching materials in local level and I am very favor toward using teaching material” are significant with chi-square value 35.56 at 0.05 level. The

statement “It is behavioral teaching material in every mathematics classroom in terms of time” is significant with chi-square value 30.00 at 0.05 levels. The statement “The teacher should stimulate to students in manipulating teaching materials” is significant with chi-square value 23.11 at 0.05 levels. The statement “It is behavioral to use teaching materials in every mathematics classroom” is significant with chi-square value 18.89 at 0.05 level. The statement “It is behavioral to use teaching material in every mathematics classroom in term of cost and use of teaching materials is useful and important to Multiple- intelligence classroom.

” are significant with chi-square value 18.00 at 0.05 level. The statement “Use of teaching materials is important in mathematics teaching rather than other subjects” is significant with chi-square value 9.78 at 0.05 levels.

Urban and rural primary mathematics teacher’s attitudes in using teaching materials.

To achieve the objective ‘to compare the urban and rural primary mathematics teacher attitudes towards use of teaching materials’ the following hypothesis was formulated:

There is no significant difference between the attitudes of urban and rural primary level mathematics teacher on mathematics.

To verify this hypothesis, the attitude score of urban and rural mathematics teacher are given in the table of Appendix-E and table of Appendix-F respectively.

The mean attitude score of urban mathematics teacher are compared with those of rural mathematics teacher by applying z-test. The results of this analysis are

presented in the table with reference to the table no 3 of Appendix-E and table of Appendix-F.

Table No. 3

Comparison between urban and rural mathematics teacher attitudes towards use of teaching materials

S.N.	Group compared	Sample size	Average mean score	S.D.	variance	t-value	Conclusion
1.	Urban	45	4.46	0.27	0.0729	o.646	S
2.	Rural	45	4.25	0.35	0.1225		

The calculated value of 'z' is 0.646 with degree of freedom ($\upsilon = n_1 + n_2 - 2 = 45+45-2$) 88 is less than tabulated value 1.96. This implies that the attitudes of urban and rural mathematics teacher were similar i.e. urban and rural mathematics teachers have same attitude towards use of teaching materials. Hence the null hypothesis is accepted.

Male and female primary mathematics teacher's attitudes in using teaching materials.

To achieve the objective 'to compare the male and female mathematics teacher towards use of teaching materials' the following hypothesis was formulated:

There is no significance difference between male and female mathematics teacher's attitude toward use of teaching materials.

To verify this hypothesis, the attitude score of male and female mathematics teacher are given in the table no 4 of Appendix-G and table of Appendix-H respectively

Table No. 4

Comparison analysis of male and female primary mathematics teacher 'attitudes towards use of teaching materials

S.N.	Group compared	Sample size	Average mean score	S.D.	variance	z-value	Conclusion
1.	Male	45	4.39	0.37	0.1369	0.292	s
2.	Female	45	4.36	0.58	0.3364		

The calculated value of 'z' is 0.292 with degree of freedom $\upsilon = n_1 + n_2 - 2 = 45+45-2 = 88$ and level of significance: $\alpha = 0.05$ is less than the tabulated value i.e. critical value 1.96. This implies that the attitudes of male and female mathematics teacher towards use of teaching materials were similar i.e. male and female mathematics teacher have same attitude toward the use of teaching materials. Hence null hypothesis is accepted.

Chapter v

SUMMARY, FINDINGS, CONCLUSION AND RECOMMENDATIONS

This section includes a brief re-statement of the problem, description of the procedure used and deals with the summary of the findings of the study, conclusion drawn from the findings and recommendations for further study.

Summary

This study was undertaken for the purpose of acquiring basic information about the attitude of teacher towards teaching materials. The objectives of the study were to find out the attitude of mathematics teachers toward the use of teaching materials and compare the attitude of teacher by gender and between regions.

In order to fulfillment of the objectives the researcher followed the survey design. The populations of the study were all the primary level mathematics teachers of Kavrepalanchok district.

The teachers were selected from one municipality and two Gaun Palika of Kavrepalanchok district by random sampling method. The number of teacher were 90 among them 45 from rural and 45 from urban region from Kavrepalanchok. There were 23 males 22 female from rural region and 22 male and 23 female teachers from urban region.

The chi-square test was used to determine the significance of attitude of teachers towards teaching materials. Z-test was used to test the comparison between mean attitude scores of urban and rural as well as male and female teacher towards teaching materials. All the tests were tested at 0.05 level of significance.

Findings

On the basis of the analysis and interpretation of the data, the study results the following major findings:

- The attitudes of the urban mathematics teacher were positive towards use of teaching materials on primary level.
- The attitudes of rural mathematics teacher were positive towards use of teaching materials on primary level.
- There were no gender differences in attitude towards use of teaching materials.
- The mean attitude score of urban mathematics teacher towards use of teaching materials were slightly greater than that of rural mathematics teacher.
- The mean attitude score of male teacher were slightly greater than that of female teacher about use of teaching materials.

Conclusion

On the bases of above mentioned findings, some significant conclusion had been drawn by this study. The conclusions are both the urban and rural mathematics teacher showed positive attitude towards use of teaching materials. There was no gender difference in attitude towards use of teaching materials on primary level. There was any significant difference in the attitude of urban and rural mathematics teacher toward the use of teaching materials on primary level. The results of this study have wide implications for mathematics teaching learning. The study has several implications for mathematics teacher teacher's educator, curriculum developers and educational policy makers etc.

Recommendations

On the basis of the study the following recommendations have been made. This study examined the mathematics teacher's attitudes toward the use of the teaching materials. It does not tell anything about student's achievements, knowledge and school environment in this subject due to attitude variables. So, further research is needed in these aspects. This study is based on the sample of only two Gaun Palika and one municipality of Kavrepalanchok district. Its findings may not be generalized to the wider population of the mathematics teacher. So the similar study should be done province-wise as well as nation-wise in order to establish a generalized the findings of the study.

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