

**PROBLEM FACED BY TEACHERS IN TEACHING VECTOR IN  
SECONDARY LEVEL**

**A  
THESIS  
BY  
CHANDRA BAHADUR KARKI**

**IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE  
DEGREE OF MASTER'S DEGREE IN MATHEMATICS EDUCATION**

**SUBMITTED  
TO  
DEPARTMENT OF MATHEMATICS EDUCATION  
CENTRAL DEPARTMENT OF EDUCATION  
UNIVERSITY CAMPUS  
TRIBHUVAN UNIVERSITY**

**2016**

## LETTER OF CERTIFICATE

This is to certify that Mr. **Chandra Bahadur Karki**, a student of academic year **2067/2068 B.S**, with campus Roll No **2232**, thesis No **936**, exam Roll No **283283** and T.U. Registration No, **9-2-414-11-2004** has completed this thesis under my supervision during the period prescribed by the rules and regulation of Tribhuvan University, Nepal. The thesis entitle '**Problem Faced by Teachers in Teaching Vector in Secondary Level**' embodies the result of his investigation conducted during the period of 2015 - 2016 under the Department of Mathematics Education, Central Department of Education, University Campus, Tribhuvan University, Kirtipur, Kathmandu. I

hereby, recommend and forward that this thesis be submitted for the evaluation as the partial requirements to award the degree of Master of Education.

.....  
(Mr. Bed Prasad Dhakal)  
Supervisor

.....  
(Assot. Prof. Laxmi Narayan Yadav)  
Head

Date.....

**LETTER OF APPROVAL**

**Thesis Submitted**

**By**

Chandra Bahadur Karki

**Entitled**

**Problem Faced by Teachers in Teaching Vector in Secondary Level** has been approved in partial fulfillment of the requirement for the Degree of Master of Education.

**Committee for the Vice-Voce**

Signature

1. Assot. Prof. Laxmi Narayan Yadav

.....

(Chairman)

2. Prof. Dr. Hari Parsad Upadhyay

.....

(External)

3. Mr. Bed Prasad Dhakal

.....

(Member)

## ACKNOWLEDGEMENT

I want to express my gratitude to the respected Supervisor Mr. Bed Prasad Dhakal, Lecture of Department of Mathematics Education, Central Department of Education, T.U. Kirtipur for providing valuable suggestion, guidelines, encouragement and constructive suggestion during the completion of this thesis.

My sincere gratitude goes to Assot. Prof. Laxmi Narayan Yadav, Head Department of Mathematics Education T.U. Kirtipur for his valuable suggestions and encourage to carry out this research. I would also like to express my gratitude to Prof. Dr. Hari Prasad Upadyay for their valuable comment and suggestion to bring this work into present from.

I would like to express my sincere gratitude to Prof. Dr. Min Bahadur Shrestha, Prof. Dr. Shiva Ram Neupane, Mr. Abatar Subedi, Mr. Lok Nath Bhattarai, Mr. Krishna Prasad Adhikari, Mrs. Sarala Luitel, Mrs. Bimala Bhattarai and all other respected teacher of Department of Mathematics Education for their kind support in thesis writing.

I owe a real debt of gratitude to the friends Suman Shrestha, Arjun Shrestha, Muna Poudel, Goma Karki and Student and Staffs of sample school and teacher for their constant help in the collection of data. And finally I would like to remember to Mr. Saturghan Shrestha for his support for the completion of this thesis.

Also, my thanks go to National Photocopy for ending and printing of the thesis. At last but not least different author and researcher those names are not mentioned here but helped me directly and indirectly during my study were also acknowledged.

Date.....

.....  
(Chandra Bahadur Karki)

## **ABSTRACT**

The purpose of the study was to find the Problem faced by Teachers in Teaching Vector in Secondary Level, and to analyze causes of those problems at Ramechhap district. The descriptive survey research design was adopted to conduct the study. Fifty teachers from Ramechhap district were selected randomly for the study. The researcher made tools used in the study were survey, opinionnaire, observation form and interview. The factor for the tools consisted of three dimension statement such as content related factors, materials related factors, and class management factors. The opinionnaire consist 11 statement was distributed to secondary level teacher. After analyze data researcher found that there are various problems that cause teacher in efficient and enthusiastic to execute duty properly in the classroom. Problem related to teacher training and its transfer in classroom teaching. Most of the problem faced by teacher showed lack of moral education, lack of student participation, lack of supervision, lack of proper teaching methods, lack of Geometry knowledge, lack of vector Geometry and vector notation, operation, lack of trigonometry knowledge, lack of proper teaching methods, lack of information technology, lack of construction the teaching materials, lack of proper Mathematical lab difficult to construction the figure, lack of content competency, lack of support to mathematics subject by the administration, lack of confidence and prepare of the teacher.

## **DEDICATION**

This thesis is dedicated to my father, mother, family and friends who always supported me through my study and always believed in me. Without them, I would not have been the place wherein I stand up today and of course not have been the person what I am today. All thanks to them for their support, love, care, encouragement and belief in me that I can do better in the days to come. In this time, I would also like to thank all my friends from University as well as outside of the University for being always there for me whenever I need them. I would also love to thank to my colleagues who guided me during my thesis work. Finally, my special thanks goes to my supervisor Mr. Bed Prasad Dhakal, though my few words are not enough to show my gratitude towards him, for guiding me, supporting me and providing me his quality time to produce this thesis.

I am grateful to all whoever has supported me directly and indirectly till now finally making me the better person.

## DECLARATION

This dissertation contains no materials which have been accepted for other degree in any institutions. To the best of knowledge and belief this dissertation contains no material previously published by any authors except due acknowledgement has been made.

.....  
(Chandra Bahadur karki)

Date:

## RECOMMENDATION FOR ACCEPTANCE

This is certify Mr. Chandra Bahadur Karki has completed his M.Ed. thesis entitled '**Problem Faced by Teachers in Teaching Vector in Secondary Level**' under my supervision during the period prescribed the rules and regulations of Tribhuvan University, Kirtipur, Kathmandu, Nepal. I recommend and forward his thesis to the Department of Mathematics Education to organize final Viva-voce.

.....

Mr. Bed Prasad Dhakal

(Supervisor)

Date:



## TABLE OF CONTENTS

	<b>Page No</b>
Letter of Certificate	i
Letter of Approval	ii
Acknowledgment	iii
Abstract	iv
Dedication	v
Declaration	vi
Recommendation for Acceptance	vii
Table of Contents	viii
List of Tables	ix
List of Figures	x
Acronyms	xi
<b>Chapters</b>	
<b>I. Introduction</b>	<b>1-</b>
<b>10</b>	
Background of the study	1
Statement of problems	3
Significance of the study	4
Objectives of the study	5
Statement of the research Hypothesis	5
Limitation of the study	5
Definition of Key Terms	6
<b>II. Review of Related Literature</b>	<b>7-11</b>
Theoretical Framework of the Study	9

Conceptual Framework	11
<b>III. Methods and procedures</b>	<b>12-16</b>
The Design of Study	12
Population of Study	12
Sample of Study	12
Source of Data	13
Tools/Instruments of Study	13
Opinionnaire	13
Observation from	13
Interview	14
Reliability and Validity of Instruments	14
Data Collection of Procedure	14
Scoring Procedure	15
Data Analysis Procedure	15
<b>IV Data Analysis and Interpretation</b>	<b>17-28</b>
Analysis and interpretations of Teacher's on Problem related to	
Content, Materials, Class Management	17
Content of Teacher	17
Causes of Problem in the Content	19
Causes of Problem in Teaching Mathematics	20
Material	21
Causes of the Problem in the Materials	23
Class Management	25
Causes of Problem in the Class Management	27
<b>V Summary, Finding, Conclusion and Recommendation</b>	<b>29-35</b>

Summary	29
Finding of the Study	32
Conclusion	33
Recommendation	35
Reference	
Opinionnaire	
Observation	
Interview	



## LIST OF TABLES

	<b>Page No.</b>
Table1: Content	18
Table2: Causes of Problem in Content	20
Table3: Materials	23
Table4: Causes of Problem in Materials	25
Table5: Classroom Management	27
Table6: Causes of Problem in Classroom Management	30

## LIST OF FIGURES

	<b>Page No</b>
Figure1:      Conceptual Framework Problem on Mathematics Teaching	11

## ACRONYMS

B.A	Bachelor of Arts
B.Ed.	Bachelor of Education
I.A	Intermediate of Arts
I.Ed.	Intermediate of Education
MOE	Ministry of Education
MW	Mean Weightage
NCED	National Center for Educational Development
NCTM	National Council of Teacher of Mathematics
T.U	Tribhuvan University

## **Chapter -I**

### **INTRODUCTION**

#### **Background of the Study**

Mathematics is the way of settle in mind and the habit of reasoning and it is an expression of human mind that reflects the active well complete reasons and desires for aesthetic perfection. Mathematics is interpreted, explained and used in different situation to generate logical, intuition, constructivism, analytical, formulation and generalization of judgment power.

Mathematics is considered as one of the most difficult subjects. The exam result from pre-primary grades to schools itself prove its significance to more extent. However, only few of us realize fact that Mathematics is more logical. Being a logical subject students do not need to memorize any words. It is primarily concerned with abstraction, logical reasoning from counting, measurement, calculation and the study of shapes and motions of physical object. It has continuously been developed and improved to meet the changing need of contemporary society.

In Nepal, mathematics had been taught as one of the major subject in secondary education. Since the beginning of modern school education secondary level general mathematics has three components Arithmetic, Algebra and Geometry in the past. Now there are more than these three areas: Arithmetic, Algebra, Geometry includes Trigonometry, Statistics, Probability, Set and Linear Programming. School mathematics curricula of Nepal have given emphasis on geometry learning from the beginning of school. The curricula have aimed at developing students understanding of intended geometric concept at primary, lower secondary and secondary level (Luitel, 2005).

Vector is related to geometry so according to NCTM geometry is one of the content standards of school mathematics which aims at developing spatial reasoning problem solving skills and communication (Sellke, D.H. 1999). Moreover, about the importance of thinking skills in geometry, a vision for school geometry (2005) writes reasoning is fundamental to mathematical activity. Active learners question, examine conjecture and experiment. Mathematics programs should provide opportunities for



learners to develop any employ their reasoning skill. A learner need various experiences to construct argument in problem setting and evaluates the arguments of others (V.S.G).

Vector is a quantity or phenomenon that has two independent properties: magnitude and direction. The term also denotes the mathematical or geometrical representation of such a quantity. Example of vectors in nature are velocity, momentum, force electromagnetic fields and weight (weight is the force produced by the acceleration of gravity acting on a mass). A quantity or phenomenon that exhibits magnitude only with no specific direction is called a scalar. Example of scalars includes speed, mass electrical resistance and hard-drive storage capacity. (Oh HoonKuon) Department of mathematics Michigan State University, A street A configuration of vector representation based on multiple representation, cognitive development and mathematical conceptualization, to serve as new uniting framework for studying undergraduate student approaches and difficulties in understanding and using of vector is proposed . Using this configuration, the study will explore 5 important transitions, 'physics to mathematics', arithmetic to algebraic', 'analytic to synthetic', 'geometric to symbolic', 'concrete to abstract' and corresponding student difficulties along epistemological and ontological axes. As a part of validation of the framework a study on undergraduate students' approaches and difficulties in understanding and using of vector with both quantitative and qualitative methods will be introduced and we will see how useful this new framework is to analyze student approaches and difficulties in understanding and using of vectors.

Undergraduate students usually experienced vectors in school physics and school mathematics when student study undergraduate mathematics, they see vectors again in multivariable calculus, linear algebra, abstract, algebra and geometry courses. Some student are vector in introduce physics of engineering courses while they are studying vectors in mathematics. Although, undergraduate students' experiences with the concept of a vector varied. Student skills have difficulties in understanding and using vectors in various situations. In this research, we are going to explore the following:

Most of the studies about multiple representations are centered on the concept of a function (Janvier, 1987, NCTM, 200). Unlike the representation of a function

vector representations have a hierarchy and are strongly dependant on the context of given question.

Optional mathematics is the part of higher education. Also modern mathematics in Nepal was started from intermediate level at Tri-Chandra College established in 1918. At that time, there were two facilities namely humanities and social science and science and technology in which mathematics was include at intermediate or pre-bachelor level. Mathematics classes in B.A. and B.Sc. were started in 1932 A.D and 1942 A.D respectively at the same college (kmy). (200, 33) after the advert of democracy in 1951, people felt the need of educational progress for national development and thus the policy of the country influenced the educational system as well in 1951. Mathematics was optional for women and compulsory for men in secondary level. With the recommendation of Education Board (1952) the National Teacher Training Center was established in 1953 to disseminate the appropriate education among the Nepalese people. The college of Education started at Chet Bhawan in 1956 under the ministry of education.

### **Statement of the Problems**

The new curriculum of mathematics in secondary level has been implemented in Nepal since 2055 B.S. Many problems have been arisen in vector because of different causes and it is well appropriate to discuss about problems facing by Teacher in teaching vector. To grasp what student approaches and difficulties are in understanding and using of vector representation, many different context and different levels. Many mathematics teacher and professors already know students' difficulties from their experience of teaching. However, those difficulties are not classified systematically and they are very scattered and isolated. Most studies about vectors are from physics point of views related with physical quantities and by physics educators. Spyrou, and Tall (2003) attempted to analyze student approaches and difficulties on vector representation with more mathematical point of view. However, their studies cover only secondary level.

This study will be mainly concern with the study of problems faced by secondary school mathematics teacher in teaching vector. This study sought to answer the following research questions.

1. What are problems faced by the secondary school mathematics teachers in teaching vector?
2. What are the causing factors affecting teaching or learning in vector content?

### **Significance of the Study**

Mathematics is an essential part of school curriculum of Nepal. It has been taught as compulsory subject at any level of school education program. Therefore, mathematics has been given an important place in the curriculum of all levels of school education. Most of the students are weak in mathematics. However, it is felt that most of the students dislike mathematics and afraid of it. The result of the examination shows that most of the failures were failed in mathematics.

In secondary level, curriculum for higher education and higher advanced learner added optional mathematics. In secondary subject, optional mathematics has included vector topic, which is related to geometry. Though, most of the teachers and students take geometry as difficult abstract and boredom subject. Most of the teachers give low priority to geometry teaching from the lower classes. As a result most of the students lose their interest in learning geometry and vector and they have poor motivation in geometry and vector classes. Moreover, many students have a wrong impression about the need of vector geometry and seen to fear and even hate geometry due to the lack of knowledge and geometrical background on the part of the teacher.

So, there is a great need to identify whether there are real problems or not, problems may arise because of confusion about subject matter, lack of physical infrastructure, teacher training, and teaching materials, economically poor condition of school and inadequate knowledge of curriculum and so on.

This study will provide some logical and valuable farther information about the current problem of teaching vector faced by secondary level. It will also help to provide information to the concern agencies to reform and improve the vector geometry and vector contents of secondary level.

## **Objectives of the Study**

The main objectives of this study are to identify the problems forced by teachers in teaching vector in secondary level. The problems specifically it can be stated as:-

- To identify major Problems in teaching vector Geometry
- To analyze the major causes related to the problems in teaching vector Geometry.

## **Statement of the Research Hypothesis**

The research hypothesis formula for this study was as follows:

- i) There is no significant difference between the extent of problems faced by trained and untrained teacher.
- ii) There is significance difference between the problem faced by trained and untrained teacher.

## **Delimitation of the Study**

This study was limited to the following facts:

- i) This study was concerned with the problem faced by secondary school mathematics teacher in teaching vector (proving and verifying theorem).
- ii) This study was only focus on content competency.
- iii) This study was concerned with only the vector geometry problem of optional mathematics.
- iv) This study was limited to Ramechhap district only.

### **Definition of Key Terms**

Trained Teacher: The teacher who has I.Ed. B.Ed. or have ten months special course training provided by MOE or NCED or authorized institution, are defined as trained teacher.

Untrained Teacher: The teacher who have I. A., B.A. or any faculty of mathematics except education faculty or have not got ten months special training provided by MOE or NCED or authorized institution is defined as untrained teachers.

Classroom Practice : Class work, use of practices book, use of Mathematical lab, making and using of instructional materials, use of Computer and information technology etc.

## Chapter - II

### REVIEW OF RELATED LITERATURE

It is essential to review the related literature to compare the study which provides strong knowledge about the related topic. Number of books research reports, papers and other booklets can be found that concerned with curriculum, teaching materials methods and so on. However, researcher could not find an investigation on the problem faced teacher in teaching vector in secondary level.

The researcher has reviewed some selected literature as follows:

Lamichhane (2001) did a survey type research on "A study of problem faced by the secondary level mathematical teacher in teaching mathematics" in Kaski district. He concluded that several problems proposed up in the eyes of teachers such as inadequate of text book and teacher guide, lack of instructional materials, teachers' training, lack of supervisory help, lack of physical facilities etc. Further the concluded that the lack of motivation to learn mathematics is poor on the part of students.

Pandit (1999) mentioned on an article problem faced by mathematics teacher educator in the implementation of three years B.Ed. level mathematics curriculum in Nepal. He concluded that mathematics teacher education program in Nepal is distributed by so many factors such as lack of lecturers involvement in curriculum planning, lack of efficiency to conduct teaching facilities and aids, students weak background in the subject matter, lack of opportunity given to upgrades their knowledge and a huge number of personnel problems of lectures.

About the problems in teaching mathematics Pandit (1999) writes in his one article, teaching mathematics as the mathematics teacher many face different kind of problem while teaching further there may be problems related with mathematics education program, which directly or indirectly affect to mathematics teaching such problems as whole can be divided into two parts.

- a. Problem in mathematics education and
- b. Problem faced by them while teaching mathematics in real classroom situation and some remedial suggestions has also been given in this article.

Amatya (1978) concluded a thesis entitled "A study on the effectiveness of teaching mathematics with and without use of instructional materials" and concluded that the overall mean achievement of students taught with the use of instructional materials improved significantly of students taught without the use of any instructional materials.

Maskey (1975) concluded the comparative study on mathematics achievement of primary school students under different class size. He has concluded that the student studying in small sizes has higher achievement than the student in large size class.

Study on the problems faced by the Teacher in Kathmandu District in the implementation of mathematics curriculum for lower secondary schools. Pathak (1986) concluded that most of the teacher of Kathmandu district have not been facing problem in the selection and use on the instructional materials but they were facing problems in selecting proper evaluation devices.

In a similar study, Baral (2009) concluded that the objectives of curriculum seem to be idealistic, hence they couldn't be fulfilled in present context of mathematics teaching, learning situations. He found that the textbook for this level as inadequate. He concluded that only paper pencils test was in use.

Gautam (2000) conducted a thesis entitled " A study on the availability and use of instructional materials in teaching mathematics at primary schools of parbat district of Nepal" and concluded that the availability of the instructional materials in the school was not satisfactory, materials were not properly used most of the materials brought from market and some teacher never heard the word flannel boards, geo-board, Cuisenaire, rod and Tangram which are very useful.

Chaulagain (2000) conducted the research in "A study of problems faced by secondary school mathematics teacher in teaching geometry" The objective of the study was to identify the problems face by the secondary school mathematics teacher in teaching geometry. Design of the study was descriptive survey method. Using this method more items can be asked and more flexible but factual information can be gathered. In sample of study 30 secondary level mathematics teachers were selected by method of one teacher from one school rasion purposively. The sample of the

teacher was selected equally from public and private secondary school based on. The tools of the study were questionnaire. Interpretation of the study was problems of trained and untrained teachers. He concluded that geometry teaching and learning is not satisfactory level at Kathmandu district. Also found that teachers don't have significant problems on applying educational techniques and using locally available materials. More interestingly, it is found that both trained and untrained teacher have been facing more or less similar problems, on the same way, public as well as private school teacher are facing almost similar kind of problems.

Milam (1951) did a survey type research on the problems of beginning teacher in Sudan. In this study, he analyzed the problems of beginning teacher in four different topics. Staff's problems, student's problems, social problems and personal problem. The researcher identify that major problems of beginning teacher were inability to adjust to the community, lack of supervision, inability to individualize instructions, lack of basis supplementary materials, inability to control students, large classes, unattractive classroom, multiple duties of teachers, inability to budget salary to teachers, physical and mental fatigue, and attendant upon teaching.

Limbu (2007) concluded a thesis entitled "A study of problem faced by the students in geometry at secondary level". The objective of this study was to identify the problems faced by the secondary level mathematics students in learning geometry. Research Design of this study was descriptive survey methods. Sample of the study was 5 urban schools and 10 rural school also four students (2 boys and 2 girls) and related mathematics teacher were selected.

Analysis and interpretation was given on the topics: teaching learning activities, classroom management, instructional materials, proving and verification theorem and evaluation techniques. He concluded that proving and verifying theorem and construction were found as major problems comparing those problems between urban and rural school students, it was found that both were facing similar kind of problems.

### **Theoretical Framework of the Study**

By the nature of discipline, vector is a subject of logically complicated and abstract structure. So Students feel difficult in learning. Many mathematics teacher and professors already knew students difficulties from their experience of teaching.



However, those difficulties are not classified systematically and they are very cofferred and isolated learning vector geometry is a matter of gaining ability through the help of instruction is the belief on learning vector. There is a new principle will be develop to create case and format for teaching and learning vector ideas. This principle will be give development of vector geometry; there will be develop stage of interaction that can help student and teacher in acquiring vector idea. This level of mental development has been categorized by P.H. Van - Hiele's (1957). According to this principle of instructional phases the identification of prior level of mental development is the identification of actual pre-requisites needed for the better understanding of basic skills.

Corresponding to the post level of mental development the mental levels of instruction as suggested in Van-Hiele's theory are given below and this is the theoretical base of the study.

Level O - Visualization: The student identifies names compares and operates on geometric figure (e.g. triangle, angle, and praline) according to their appearance.

Level 1- Analysis: The student analyzes figures in terms of their components and relationship and discovers properties, rules of a class of shapes empirically (e.g. folding measuring and using a diagram).

Level 2- Abstraction - The student logically interrelate previously discovered properties rules by giving or following informal argument.

Level 3 - Deduction - The student proves theorems deductively and establishes interrelationship among networks theorems.

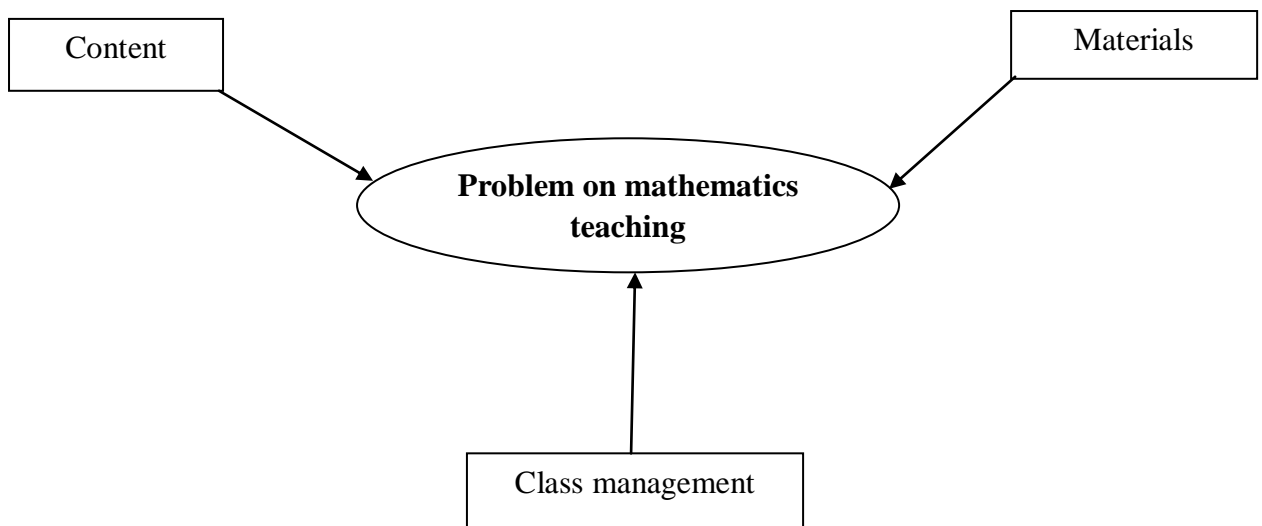
Level- 4 - Riger: The student establishes theorems in different population systems and analyzes compares these systems.

If the students in this class are functioning at level I (Visualization) where, they recognize a figure by its appearance. They will not be able to play the game. If student are at different levels in one class, the teacher must use differentiated instruction to meet the needs of all of his or her students. Students should be encouraged to freely explore the materials; they will discover some properties and

structures. While students are playing the teacher can observe and informally assess student's thinking and language. Encourage student to share and talk about the shapes and picture they have made.

### **Conceptual Framework**

Conceptual framework has been developed as per the objectives of the research. This flow chat given below is constructed with the help of previous researcher and studies to identify major problems in vector Geometry. These researches area will be analyze by Van - Hiele's perspective.



## **Chapter III**

### **METHODS AND PROCEDURES**

This chapter present the procedure of the study which will carry out to achieve the objective of problem faced by teacher in teaching vector in secondary level" and to get the answer of the statement of the problem. It comparison design of the study, the population of the study, sample of the study, source of data, tools, data collection procedure, data analysis procedure and interview. The major procedures that will be followed in this study are as follows.

#### **The Design of the Study**

The design of the study was quantitative authenticated by qualitative approach. This study was concerned with the study problem face by teacher in teaching vector in secondary level. So, descriptive survey method and quantitative approach was applied in this research.

This study was exploratory, because the survey design to some extent, and descriptive on nature using by logical and statistical interpretation. More Quantitative and less qualitative approach were used to collect and generate the data. The quantitative methods, survey opinionnaire were used as main tool to collect the data in meaningful way. Similarly the qualitative method was used to support the quantitative data where meaning was less understood. Some of the qualitative data were also emerged from observed instances during interactions with teachers.

#### **Population of the Study**

The population of the study means all entire mathematics teachers who teach mathematics in secondary level optional mathematics in Ramechhap district during the academic year of 2073.

#### **Sample of the Study**

For the purpose of the study, fifty optional mathematics teachers were selected randomly from Ramechhap district. Among Fifty teachers five were selected randomly for interview and five were selected randomly for observation.

## **Source of Data**

Both primary and secondary data were used in this study, secondary data were used for the understanding of the past research study related to this study of the literature section and primary data were the main source of the analysis and interpretation of the study, which was carried out through opinionnaire, interview and observation.

## **Tools/Instruments of the Study**

One of the most important parts of the study is data collection. Every aspect of the study can be analyze and studied on the basis of date collection techniques. The outcomes and the validity of the study depend on the techniques of data collection. There are many tools for the qualitative research to get the information from the people about their experiences, ideas and believes. In this research three tools were constructed on the basis of need and characteristic of the sample chosen .Three major tools are: opinionnaire, observation, and interview schedule the construction process and area covered in the tools are described by conceptual Framework.

## **Opinionnaire**

The opinionnaire was constructed after the detail study of related literature such as articles, documents and thesis. At the end of each opinionnaire, the respondents were requested to comment the items of opinionnaire that do not cover the additional necessary areas.

The opinionnaire consisted of 11 statement pertaining problems to be faced by the mathematics teacher and each statement followed by ranked responses in the five point of likert scale. The statements of the opinionnaire was constructed in such a manner that they could find out the problems of the teacher while teaching vector. The areas of the problems were related to the proficiency of teacher, teaching styles, mathematical instructions, methods and materials.

## **Observations from**

In the way of collecting primary data, the observation was used. It is systematically planned and recorded and also ensures is validity and reliability.

The class observation form which prepared by (Subedi, 2064) was used to observe the classroom practice in mathematics teacher focusing on teaching and learning activates, classroom management, instructional method and materials, proficiency of teacher, training .

### **Interview**

This tool was used for qualitative information. Five teachers were selected for the interview. After collection of the opinionnaire survey, the researcher selected five teachers for interview. The interview guide lines were prepared in such a way that any teacher can give factual information about, teaching problem and classroom management.

### **Reliability and Validity of Instruments**

The reliability and validity of tool were ensured by pilot study. For piloting the tools, they were validating through concerning the expert of the related field. Besides, the researcher conducted pilot test among ten teachers of Manthali, Sunarpani, Ramechhap, Salu, Rampur of Ramechhap district. This insures the tool of reliability and validity. After piloting, some opinionnaire statements were modified, some were rejected.

### **Data Collection Procedure**

In the process of data collection, the researcher visited each of the sample school along with the opinionnaire from and request letter. The researcher selected a teacher from the selected school for the study purpose. Mainly the study was related to the problem by teacher in teaching vector.

After explaining the purpose of the visit, the researcher, in his presence, requested each of the teachers at the school, included in the sample to fill the opinionnaire honesty. The researcher explained and clearly the any confusion that arose in understanding the statement. The oppnonnaire were distributed to the 50 teachers of selected areas. So, the data were collected analyzed and interpreted. However, almost teacher filled up the opinionnaire under the supervision of the researcher which reduced the contusion about items.

Regarding the observation, the teacher were informed earlier with the purpose the study to be conducted and with permission, the researcher recorded the information through series of class observation.

Similarly the interview had been taken from 5 teachers. After collection of data, from interview, the researcher appreciated and thanked for the attentive support in data collection.

### **Scoring Procedure**

For the analysis of positive items weight of 5,4,3,2,1 was assigned to statement 'strongly agree, 'agree' undecided' disagree' and 'strongly disagree' respectively. Mean weight was calculated. Total score of five point likert scale is 15; thus average score is 3. If the calculated index is greater than 3 then it was concluded that the statement content in strong favor problem. If the index was less than or equal to three, then it was favor to the problems.

### **Data Analysis Procedure**

Analysis of data means studying the organized materials in order to discover inherent facts. Since the study was quantitative. The methods were used basically descriptive. After collecting data, the researcher analyzed and interpreted using both quantitative and qualitative methods of analysis and interpretation.

At first, the researcher analyzed the quantitative data by using table and simple statistical methods, descriptive statistic to deliver the meaning of the data, and these result were analyzed with the qualitative techniques to some extend for the validation of data using by likert scale. The researcher was grasped and captured the main theme of data for the meaningful analysis.

The researcher used the data collected from the filed by observation and interview. The collected data was categorized according to the category of the respondents. To maintain the validity and reliability of the result of the study, triangulation was adopted. The collected data from observation notes and interview of the study was analyzed and interpreted by the researcher describing separate headings problems related to content, materials and class management.

The analysis of classroom observation was intended was to initiating of lesion, knowledge of subject matter, teacher's activities and methodology, use of instructional materials, learning environment, control of classroom, classroom activities and related problems that arouse in the classroom while teaching Mathematics.

In the present study, initiating the researcher has presented the data obtained from opinionnaire, and then the data were collected through observation schedule, and then interview. These open-ended and unstructured interviews were more conversational in nature provided opportunities for knowledge to build upon previous responses. The goal was to have the participants reconstruct experiences related to the topic. The data obtained through opinionnaire was analyzed and interpreted with the help of mean weightage. The mean weightage of each item in opinionnaire was calculated thought dividing the sum of the rank score of each item by the number of respondents. If the calculated mean weightage became greater than 3, then in this case the item was considered as favorable and consequently regarded as problematic item for the research, otherwise the items were considered as unfavorable and then non-problematic item. Further, the information collected through interview schedule was individual feeling, perspectives attitudes and experiences of interviewees towards the asking opinion and the information through selected teachers were finalized conclusion. Finally, the collected data have been analyzed and interpreted according to the conceptual framework.

## **Chapter - IV**

### **DATA ANALYSIS AND INTERPRETATION**

In this chapter, the collected data were analyzed. For the collection of data, the opinionnaire, class observation from and interview schedule were used by the researcher for the purpose of the study. In the eleven opinionnaire were asked to the teacher. The collected data were analyzed according to the purpose of the study. The tabulated data were statistically analyzed and the interpreted by using Likert scale. These data were analyzed area-wise and opinion-wise in the various problems faced by mathematics teacher related to the mathematics teaching at secondary level of Ramechhap district.

#### **Analysis and Interpretations of Teacher's on Problem Related to Content, Materials, Class Management**

Content, materials and class management are important part of the successful and meaningful teaching and learning process. All the achievement of teaching processes depends upon the teacher. Content, Materials and class management are vital part of teaching learning process.

For the understanding of the teacher's problem in vector researcher used an eleven opinion with 11 statements in three areas. The three areas were content, materials and class management. The researcher tried to elaborate the problem in those areas in detail.

#### **Content of the Teacher**

Content is the main part of the subject matter for the effective teaching. Content is also affected by the learner's abilities and teacher's teaching environment. Among the various aspects of content, following were asked in the opinionnaire.



**Table No. 1**

**Content**

S.N.	Statement	SA	A	UD	D	SD	Total	MW
1.	Students have required pre- requisite knowledge of subject matter content knowledge.	25	64	33	24	6	152	3.04
2.	Students are motivated to learn Mathematics geometrically, meaningfully.	10	56	18	36	10	130	2.6
3.	It is practicable to prepare lesson plan daily while teaching vector Geometry.	0	20	27	44	14	105	2.1
4.	The subject matter is relevant, useful and illustrative.	65	52	33	8	9	167	3.34

The above table shows teachers' response on their problem related to content. On the first statement, students have required pre-requisite knowledge of subject matter was not the problem to the teacher. The mean weightage of it was 3.04. In this statement all sampled teachers responded that is not their problem. It is clear that this statement is not problem for the mathematics teacher. It is found that there is not any problem regarding student's pre- request knowledge of subject matter. In the 2<sup>nd</sup> statement the mean weightage is 2.6. This statement focus on the students' motivation on learning. In this statement, all sample teacher respondent that, students are not motivated in learning mathematics. Thus, it has been considered as problem of mathematics teacher. On the 3<sup>rd</sup> statement most of the teachers were agreed. The mean weightage it is 2.1. It indicated that teachers are does not prepare lesson plan daily. Thus, the statement is considered as problem for the teacher. On the 4<sup>th</sup> statement

the mean weightage was 3.34. It indicates that the subject matter is relevant, useful and illustrative. There is no problem for teacher.

Hence, the study shows that students were not motivated to learn Mathematics. According to the respondents and teacher do not prepare lesson plan daily. These two statements were considered as problem in the content.

### **Causes of the Problem in the Content**

According to the class observation, the teaching style of teachers was almost similar. Students were not motivated to learn mathematics geometrically and meaningfully. The students take their teachers in the positive way but they are unable to say to their problem to their teachers. Even though teachers are expert in Mathematics' but they lack of use teaching materials to satisfy their students. Students are also not regular in the class. In most of the observed class teachers had no formal planning for the lesson. Almost all of them entered with marker and textbooks. Generally, their teaching style was not used by problem solving approach they focus on lecture method.

Based on the information obtained from opinionnaire and observation, the teachers were interviewed regarding the causes of problems. The researcher asked a question to the teacher, "Why are students not interested in Mathematics?" One of the respondent teacher said, "*Students were not participated in the class regularly and they did not solve the problem. Students have poor geometrical knowledge so they can't easily understand the vector geometry*". Another respondent teacher said, "*Languages' also problem of students*". In teaching process, they used Nepali and English languages as medium of instruction, and English only while writing on the board. Also students have poor geometrical knowledge so that they can't easily understand the vector geometry.

Based on the observation, and interview, the basic causes of the teacher's problem on content were student's irregularity, low motivation in the subject, poor geometrical background, and mathematical language.

## Causes of Problem in Teaching Mathematics

Teaching is a complex job. It is an art too. All the achievement of teaching processes depends upon the teacher. According to responded teachers were some problems in opinionnaire. Thus, the various aspects of problem of teaching following three aspects were observed by researcher. These three aspects were content, materials and class management.

### Content

A major component of curriculum is content which is selected and included in the curriculum to fulfill the aims and objectives. Content should be reflecting the aspirations, desire, demands, values, wishes and culture of the society. Similarly content addresses the problem of the society and tries to solve them. Contents are included in the curriculum playing attentive to the development, prosperity and progress of the society. On the basis of the contents of the curriculum textbooks are prepared. Textbooks are the collection of selected and graded contents. To achieve the aims and objectives of the curriculum contents are taught in the classroom. The content of the textbook should be socially valid, significant, reliable, authentic and useful. Otherwise it cannot be accepted by the society. The content of the textbook should be vertically and horizontally organized.

**Table No.2**

S.N.	Observation point	Good	Neutral	Poor	Total	W.M
1.	Initiation of the lesson.	0	2	4	6	2
2.	Knowledge of teacher to subject matter.	3	4	2	9	3
3.	Apply of appropriate teaching materials.	0	0	5	5	1.66

On the 1<sup>st</sup> statement is initiation of the lesson the mean weightage is 2 which is average of observation class. In the first statement the researcher found that the

selected teacher did not starting the lesson attractive and interesting. Some of the teacher's starting the lesson was very poor. It shows that most of the teacher doesn't prepare and pre plan about the subject matter. Most of the teacher has lack of teaching methods, lack of use of teaching materials and lack of information technology use in classroom teaching.

On the 2<sup>nd</sup> statement the mean weightage it is 3. Which is favorable case, in the observation there was only one teacher had available knowledge about the subject matter. Two teacher's knowledge to the subject matter was very poor they can't control student in the classroom. They can't sketch the geometrical figure according to the statement. In five selected teacher only two teachers had mid level knowledge to subject matter.

On the 3<sup>rd</sup> statement the mean weightage it is 1.66. It shows that teacher is main problem is construct and use adequate instructional materials. In observation the researcher found that most of the teachers are teaching subject matter without studying materials, they used only book. Also researcher found that they can't construct the appropriate teaching material to vector.

The above data shows, one statement is favorable. Two statements are unfavorable. The researcher found that most of the teacher's initiation of lesson was poor. In five selected teachers there was one teacher was confident about subject matter. There was no use of teaching materials, only use of marker pen, book and whiteboard. There was no audio, video Mathematics lab, internet and projector

## **Material**

Generally, materials are the object or things. Teaching materials are the object that useful in the teaching learning activities. Teaching materials are of different types on the basis of its size, use, effect etc. To address the need and aspiration of the present learner, the teacher must be equipped with the subject theory and its proper implement .For the proper implementation, the effective use of teaching materials is a must. Among the various kinds of materials, following were asked in the opinionnaire.

**Table No.3**

S.N	Statement	SA	A	UD	D	SD	Total	MW
5.	Computer support and teaching materials are available in school.	15	24	33	38	6	116	2.32
6.	Teacher's Guide book available in school.	20	60	48	22	4	154	3.08
7.	School is support and constructor to assist and help in making and using instructional materials.	30	44	27	26	11	128	2.56

The above table shows teacher's response on their related to materials. Most of the teaching materials are not prepared. Teaching materials is the main part of motivation in subject matter. Readymade instructional materials are more economical and more attractive. The 5<sup>th</sup> statement is about the support of Computer and teaching materials, most of the respondent teachers disagree. The teacher felt difficulty when mathematics can't be taught practicably and without projector and computer support. The mean weightage of it was 2.32. Thus, the statement is considered as problem for the teaching for material. On the 6<sup>th</sup> statement teacher's Guide book available in school there was not problem about it. All sample teacher's respondent that, books and environment of library was satisfactory on the sample school. The mean weightage is 3.08. It indicated that responded teachers are satisfied in the teacher's Guide book. On the 7<sup>th</sup> statement, about the school is support and constructor to assist and help in making and using instruction materials, Most of the teachers were agree. The mean weightage is 2.56. It indicated that school does not support respondent teachers. Teacher must to study the reference books and Mathematical journals without teaching materials learners are not motivated to learn. Thus, the statement is considered as problem for the teacher.

Hence, the study shows that support of computer and teaching materials were not available in school. According to the respondents and teachers school was not support and constructor to assist and helping in making and using materials. These two statements were considered as problem in the materials.

### **Causes of the Problem in the Materials**

According to the class observation, shows that, in most of the observed schools, support of computer and teaching materials are not available. In some of the schools, they are available but it was insufficient according to the quantity of the students. Almost of rural areas' schools which are poor physically and economically. Almost of the observed schools had teacher Guide book, but teachers had used only Mathematics test book. Also, most of the observations found economic capacity of schools of rural areas are not good supported and constructed to asset and making instructional materials. The campus library must consist of enough textbooks, reference books, magazines, journals, and reading materials. The instructional materials are essential parts in Mathematics teaching. It helps to make teaching learning activities effectively, more achievable, and more meaningful. The study illuminates that there was not the availability of adequate instructional materials at participating schools. In observation, students became failure to construct and use adequate instructional materials. Teacher did careless to use instructional materials due to lack of enough practical knowledge, lack of adequate skills and experience about instructional materials, lack of enough time to construct instructional materials. In most of the observed classes there was not problem about maker pen and duster.

Based on information obtained from opinionnaire and observation, the teachers were interviewed regarding the causes of problems. The researcher asked a question to the teacher, "In your opinion, why the computer supports system and teaching materials are not available in school?" One of the respondent teacher said, *"Most of the schools are economically poor, lack of physical facility, lack of electricity, lack of information technology"*. Another question's the respondent teacher said, *"21<sup>st</sup> century is scientific and information technological period if we can't up date period of time we may be blind so we have to move with time"*. Therefore we solved the Mathematics problem using Mathematics laboratory, using multimedia

teaching technology such as audio-video or overhead projector etc in classroom teaching.

Based on the observation, and interview, the basic causes of the teachers' problem on materials were lack of enough practical knowledge, lack of adequate skills and experience, lack of enough time to construction materials, school are economically poor, lack of physical facility, lack of electricity, lack of information technology.

### **Materials**

Materials are an integral part of teaching without which teaching becomes unfruitful, boring, tedious and meaningless. Teaching materials makes teaching learning activities effectives, meaningful and fruitful. Teaching materials assist to makes teaching item clear to the students. Teaching materials attracts the attention of the students. It helps to concentrate their attention to teaching item. It makes students active. It helps to remove the boredom of the students. In teaching period, the teacher should use materials considering the content of teaching, desires and level of the students. Teaching materials is essential to obtain the objectives of the curriculum as for as possible, the teacher should use cheap, portable and label materials.

**Table No: 4**

S.N.	Observation point	Good	Neutral	Poor	Total	W.M
4.	Using instructional material related to subject matter.	0	0	5	5	1.66
5.	Use of graph, chart, paper, geo board, flattens board.	0	2	4	6	2
6.	Others	0	2	4	6	2

On the 4<sup>th</sup> statement the mean weightage is 1.66. Most of the teachers teaching without instructional materials related to subject matter. The researcher found that teaching materials are available in school but teachers are not used. Some of the teachers can't construct the teaching materials related to subject matter. The researcher also found that, some of the teaching materials are difficult to receive the related subject matter.

On the 5<sup>th</sup> statement is use of graph, chart, paper, geo board, flatten board, which mean weightage is 2. In observation period there was only one graph, chart, geo board and flatten board which was in Manthali higher secondary school Manthali. In duration of observation time, the researcher found that teachers are used only white board and all class rooms are insufficient according to the number of students.

On the 6<sup>th</sup> statement mean weightage is 2. It is average point of all the choice points. In other instructional materials only one school used to smart board. It is modern instructional materials by the use of it we can teach geometry easily and construction the figure in board by marker or without.

The above table shows that using instructional materials related to subject matter is very poor. There is only one school which is used to graph, chart, paper, geo board and flattens board. It meant they are careless to use instructional materials. Use of instructional materials due to lack of enough practical knowledge, lack of skill and experiences about instructional materials, lack of enough time to construct instructional materials and lack of creativity of teacher.

### **Class Management**

Educator has been aware that the quality of classroom management is an important factor to pupil's achievement and teaching success. We wrote about management rather than control in classroom because management emphasizes that learning and teaching are complementary activities just as a successful manager in commerce and industry to avoid dispute. Therefore, in classroom, successful teacher always try to provide remarkable learning activities. So that the students can develop their conceptual thinking in overall situation concerned with classroom management. Among the various aspects of class management, following were asked in the opinionnaire as given below.



**Table No.5**

S.N	Statement	SA	A	U	D	SD	Total	MW
8.	Board is good and enough spaced in Mathematics class room.	35	64	27	24	6	156	3.12
9.	There a Mathematics laboratory or Mathematics lab in school.	10	24	27	38	14	113	2.26
10.	Students are laborious, interesting and disciplined.	15	36	42	34	7	134	2.68
11.	School is well equipped with desk and bench in the class room according to the number of students.	35	52	48	18	5	158	3.16

The above table shows teachers' response on their problem related to class management Suitable classroom environment is an important part of classroom teaching. The classroom should be cleaned and sanitized properly. Normally, the management is the process of organizing, directing, controlling the public. Classroom management is the process of setting the class room in a good learning posture. On the 8<sup>th</sup> statement, Board is good and enough space in mathematics class room, most of the teachers agreed. The mean weightage of this statement is 3.12. In this statement there is not any problems for responded teacher. It means board is good and enough space according to school's building, classroom size and age of students. On the 9<sup>th</sup> statement most of the teachers do not agree. In this statement all sample teacher responded there is only one mathematics laboratory. The mean weightage of it is 2.26. This indicated there is a genuine problem in teaching mathematics in the absence of teaching machine such as calculator, computer, and smart board. In the modern time, Mathematics is blind without machine and computers. Thus, it has been considered as

problem for Mathematics teacher. On the 10<sup>th</sup> statement sample teacher responded mixed comment. Out of them five teachers agreed that we got frustrate, unmotivated to learn mathematics. The mean weightage is 2.68. It showed that students are not motivated, not laborious and disciplined and they are not interested and awareness in Mathematic class. Thus, the statement is considered as problem for the teacher. On the 11<sup>th</sup> Statement most of the responded teachers agree. The mean weightage of it is 3.16. It is clear that, this statement is not a problematic for responded teacher. It means school building is available and suitable according to the number of students. Thus, there is no problem for teacher.

Hence, the study shows that there was no Mathematics lab in school. According to the respondents' teacher students were not laborious, interesting and disciplined. These two statements were considered as problem in the class management.

### **Causes of Problem in the Class Management**

According to the class observation, in most of the observed class board was good and enough space in classroom in selected schools. There was only one Mathematics laboratory in Manthali School. Most of the school's student were not laborious, interesting and weren't disciplined. There was a lack of few number of student's participation in the Mathematics classroom, lack of motivation to the students and students were utilized by political program. The study shows that Mathematics Classroom was not crowded. There was not any problem about classroom furniture and for sitting space due to classroom furniture. Suitable classroom environment is an important part of classroom teaching. In most of the observed class, writing boards used in classroom teaching was of white color. Many of them were in small size and low quality. Most of the writing board was less attractive. In this regards, the students concluded that it was difficult to solve long mathematical problems and sketching the Mathematics figures. Mathematics learning environment was not good, Mathematics classroom was not controlled and classroom activities were not good. There was the great deal of carelessness among the students for classroom management.

Based on the information obtained from opinionnaire and observation, the teachers were interviewed regarding the cause of problems. The researcher asked a question to the teachers, “why are the Mathematics labs not available in most of the school?” One of the respondent the teacher said, “*most of the school economically condition is poor, lack of room, lack of information technology, lack of responsibility.*” Most of the teacher can't use the Mathematics lab Solved of this problem. Therefore the Government provide to teachers tanning about information technology. An another question, the respondent teacher said, “*nowadays students are not laborious, interested, and disciplined because they use to mobile, internet, face-book, video and chatting in the out of school's time and also teaching process is democratic. Most of the school's classroom is without control of teacher*”.

Based on the observation, and interview, the basic causes of the teachers' problem on class management were not Mathematics laboratory but it had small size and low quality of board. Students were not laborious, interesting and disciplined, poor economical condition, lack of information technology, use of face-book and chatting, democratic teaching process, uncontrolled class room.

### **Class Management**

Creation of the good environment in the classroom to achieve the aims and objectives of teaching is called class management. The main objective of the classroom management is to create learning centered environment in the classroom. Generally, classroom management includes the management of physical, instructional and physical aspects include the sanitation, seating, lighting, temperature, teaching materials etc. The class room instructional aspect includes utilization of teaching materials, implementation of instructional materials and learning situation of the class. Classroom management indicates suitable classroom environment in which teaching learning activities can run smoothly despite any disturbance. It indicates cooperative learning environment with adequate physical and instructional management. Suitable classroom environment is an important part of classroom teaching. The classroom should be cleaned and sanitized properly. Mathematics classroom should be suitable in its size. It must have adequate space, sitting space as well as free space. Enough free space inside the classroom is needed for conducting different classroom activities

such as for group interactions, Mathematics exhibition, practical program, and other extra activities.

**Table No: 6**

S.N.	Observation point	Good	Neutral	Poor	Total	W.M
7.	Mathematics learning environment is good and interesting.	0	2	4	6	2
8.	Control of class room is good.	3	2	3	8	2.66
9.	Class room activities are good.	0	2	4	6	2

On the 7<sup>th</sup> statement mean weightage is 2. All the Mathematics classes were crowded. Students were discussing to each other and all the classes were not sufficient according to number of student. There was no use of computer and overhead projector. Mathematics classes were so boring; teachers were not attractive and friendly. In the five selective teachers there was only one class was neutral. Most of the teacher used lecture methods and used only book.

On the 8<sup>th</sup> statement mean weightage is 2.66. It is favorable case in the duration of observation of time there was one Mathematics class was very good. Initiation of lesson teacher explained very well gave to instruction knowledge about subject matter was very well. The researcher found that in five selected teachers, three teacher's class was poor. Teachers were confusing construction the vector geometrical figure properly.

On the 9<sup>th</sup> statement is class room activities are good its mean weightage is 2. It is average value. In duration of observation the researcher found that there was nobody classroom activities are good. Most of the teacher class room activities are poor. All of the teacher use only Mathematics book no use of practice book and

reference book. Most of the teachers teach without Mathematics lab and contraction method by materials, students were used only paper and pencil. So, classroom activities were not good.

Similarly, from the above data, there was only one on favorable case control of class room is good. Others two statements are not satisfy both of weightage is same. The researcher found that both Mathematics learning environment and classroom activities were not good both of them only one was medium and other four were poor. In the duration of research time, the researcher view all Mathematics class was medium teaching. School environment was not good. Most of the school environment was poor and duty. Students had not sufficient reading and writing materials.

## **Chapter -V**

### **SUMMARY, FINDING, CONCLUSION AND RECOMMENDATION**

This chapter is related with summary, finding, conclusion, and recommendation. After the analysis and interpretation of collected data, an attempt has been made to summarize and list the finding, conclusion and some recommendation for further study which are deal separately sections.

#### **Summary**

This study was descriptive in nature. In addition to conduct the quantitative nature by “Problem faces by Mathematics teacher in teaching at secondary level of Ramechhap district “Not only focusing the problem, the researcher also tries to find the cause of problems. So the study attempts to accomplish the following objectives:

- To identify the problem by secondary level in teaching Mathematics related to knowledge of Mathematics and teaching learning activities in the classroom.
- To find the cause of problem that was faced by Mathematics teacher in teaching at vector in secondary level of Ramechhap District

This study was divided into five chapters. The first chapter includes, background, objective, significance, statement of the problem. In the second chapter, researcher mentioned some literature that was related to the topic. In the third chapter researcher method was discussed. So, in this methodological section, different component such as design of the study, population of the study, areas of the study, source of data, tools, collection procedure, scoring procedure, analysis procedure were clearly explained. Descriptive survey was adopted for the study. The nature of the study was quantitative, but this study was also supported by qualitative data.

The problems of teacher were analyzed in descriptive way supported by observation and interview data.

### **Findings of the Study**

On the basis of data analysis and interpretation of the result, the summarizes of major findings were as follows

- Students were not motivated to learn mathematics geometrically and meaningfully. Teacher had no even formal planning for the lesson.
- Support of Computer and teaching materials were not available and school did not support and construct to assist and helping in making using materials.
- There was no mathematic lab in school. Students were not laborious, interesting and disciplined. Most of the students were unable to evaluate themselves and the activities of students were lazy and teacher were also teaching without lesson plan and did not review the subject matter.
- Students were irregularity, low motivation in the subject matter, poor geometrical back ground and Mathematical language. The teacher had not adopted discussion method. Teacher had given sufficient homework and class work but they were not checking proper due to the lack of time.
- The teacher had lack of enough practical knowledge, adequate skills and experience enough time to construction materials. Schools were economically poor due to lack of physical facility, electricity and information technology.
- There were not Mathematics laboratory but it had small size and low quality of board. Students were not laborious, interesting, and disciplined, poor economical condition, lack of information technology, use of face-book and chatting. The teacher taught with democratic teaching process

but it became uncontrolled. Student were also utilized in a political program they were not well participatory in the teaching class room due to lack of friendly relation with students and teacher, lack of pre planned and confidence of the teacher.

## **Conclusion**

From the above findings, it is concluded that teacher need to be aware from the problem student were not motivated to learn Mathematics geometrically and meaningfully. Teacher had no even formal planning for the lesson. Support of Computer and teaching materials were not available and school did not support and construct to assist and helping in making and using materials. There was no Mathematics lab in the school. Students were not laborious, interesting and disciplined.

Students were irregularity, low motivation in the subject matter, poor geometrical back ground and Mathematical language. The teacher had not adopted discussion method. Teacher had given sufficient homework and class work but they were not checking proper due to the lack of time. The teacher had lack of enough practical knowledge, adequate skills and experience, enough time to construction materials. Trained and skillful teacher were not implementing their skill in the real classroom appropriately. Schools were economically poor due to lack of physical facility, electricity and information technology. Students were used to face-book and chatting. The teacher taught with democratic teaching process but it became uncontrolled. Students were utilized in political programs. They were not well participatory in the teaching class room due to lack of friendly relation with students and teacher, pre-planned and confidence of the teacher.

## **Recommendation for the Better Learning**

More researchers is needed to the teacher problem of teaching Mathematics .However, this research spelled out the current situation of the graduate level teacher's teaching problem by using problem solving method at classroom. Based on



the finding and the conclusion from this study, the following recommendation is developed.

- The school should manage Mathematical lab, materials, and computer.
- Mathematics teacher should be responsible for the future of students.
- Cass work and home assignment should be checked day by day.
- Teacher should not be entered in the mathematics classroom without materials and pre plans.
- Teacher should be used child centered, demonstrate and participatory method than the traditional lecture method.
- Mathematics class should be fulfilling by graph board bulletin board.
- Training and seminar should be conducted for the Mathematics teachers.
- Focus on the multimedia techniques.
- Create the environment for the student class regularity.
- Teacher should be use Nepali and English language for instruction and problem solved in class.
- Provide to teacher construction and creating to instruction materials.
- Provide to training for teacher Computer and information technology.
- Most of the schools are provided the electricity
- Mobile should be banded in school areas.
- Teacher should be confidence his subject matter and control the class room.

## REFERENCES

- Acharya, P. (2006). *A study on problem faced by HSEB mathematics teacher in teaching of Grade XI*. Master thesis, Department of Mathematics Education, T.U.
- Baral, S.P. (2000). *Problem faced by mathematics teacher in teaching mathematics*. Master thesis, T.U.
- Bhatia, B.D. and Bhatia, Kamala (1987). *The principle and method of teaching*, Delhi, Doba House Book Seller and Publisher.
- Bhattarai, T. (2004). *A study on problem faced by the mathematics student in existing curriculum, A Study of Ilam District*. Department of Mathematics Education, T.U.
- Chaulagain, R.K., (2005). *A study on problem faced by secondary school mathematics teachers in teaching geometry*. A study of Kathmandu District. Masters thesis of Department of Mathematics, T.U.
- Cresswell, J.W. (1994). *Research design: Qualitative and quantitative approaches*. Thousands Oakas, CA: Sage.
- Khanal, O.P., (2010). '*A study of problem faced by Tibetan Student in learning geometry*', Master thesis, Department of Mathematics Education, T.U.
- Khanal, P. (2067). *Education Research Methodology*. Sunlight publication, Kirtipur, Kathmandu.
- Khanal, S. (2012). *Problem faced by mathematics teacher in teaching mathematics at higher secondary level*, An unpublished master's thesis.
- Koirala, H.P., (1991). *A Comparison of Problems Face by Mathematics Teacher-Educator in Developing and Developed Countries: A Case Study of Nepal and England*. Tribhuvan University Journal, 5, 15-25. Retrived from [http:// www.Nepjol.info/index.php/TUJ/article/download/3803/3254](http://www.Nepjol.info/index.php/TUJ/article/download/3803/3254)
- Lamichhane, H. (2001). *A study of problems Faced by Secondary Level Mathematics Teacher in Teaching Mathematics*. An Unpublished Master Thesis, Department of Mathematics Education, T, U., Nepal.

- Marshall, C. and Rossma, G.B. (1989). *Designing qualitative research*. Newbury park, CA: Sage.
- McCarran, & Forrester, J. (2003). *Perceived problems of Beginning Teachers and Proposed Solutions for success*. A Master's Thesis, Mississippi State University, United States. Retrieved from [http://www. Opnethesis.org/documents/perceived-Problems-Beginning-Teachers-Proposed-245883.html](http://www.Opnethesis.org/documents/perceived-Problems-Beginning-Teachers-Proposed-245883.html)
- Milam, E.L. (1951). *A Survey of the Problems of Beginning Teacher*. A Thesis of Degree of Master of Arts, Graduate studies of Texas Technological College Texas, Sudan. Retrieved from [http://www. Repositories.tdl.org/ttu-ir/bitstream/handle/.../31285072829.pdf?...|](http://www.Repositories.tdl.org/ttu-ir/bitstream/handle/.../31285072829.pdf?...)
- Nepal, M. (2010). *A study of problem faced by secondary school Mathematics Teacher in Teaching Mathematics at Palpa district*, An unpublished Master's Thesis Submitted to Department of Mathematics Education, T.U., Kirtipur.
- Poudel, B.R., (2010). *A Study on Problems Faced by Mathematics Teachers in Private School at secondary Level*. An Unpublished Thesis, T. U., Nepal.
- Sha, D.P., (2008). *A study on problem faced by student and teacher in teaching, learning of vector*
- Thapa, P.K., (2005). *A Study of Problem Faced by Primary Level Mathematics Teacher in Teaching Mathematics*, An Unpublished Master's Thesis Submitted to Department of Mathematics Education, T.U., Kirtipur.
- Tharu, R. P. (2004). *Impact of socio – Economic status on Mathematics Achievement*. Master Thesis, T.U. Kirtipur.
- Upadhaya, H.P., (2004). *Teaching Mathematics, Kathmandu*: Ratna Pustak Bhandar.
- Upadhaya, H.P., (2067). *New trends in Mathematics education*. Kathmandu: Vidyarthi Parkashan Pvt. Ltd

## Opinionnaire from for Teacher

Respected teacher,

I am master degree student of Mathematics education, central department of Mathematics education, central department of education, Kirtipur, Kathmandu. I am writing thesis entitled on 'problem face by teacher in teaching vector in secondary level of Ramechhap District' as the partial fulfillment of my degree of master of education. Teaching learning activates could not be effective without finding the actual problem of teacher in teaching vector. So, to complete my thesis, I have prepared some opinionnaire. Researcher is very much thankful for valuable help and I would like to express gratitude to you and your institution. The reliability and validity of this study is based on your responses.

Researcher

Chandra Bahadur Karki

Department of Mathematics Education

Kirtipur, Kathmandu

I requested to fill this opinionnaire were as follows.

- Please read this opinionnaire carefully and provide response as you fell.
- For opinionnaire, please write your opinion.
- You are requested do not leave blank for any opinion.



### Name of the Participating School in the Study of Ramechhap District

S.N.	Name Of The Teacher	Name of the school	Location
1	Kalidas pahadi	Bhimeshwar Ma. V	Rampur
2	Sabhpad sah	Maharudra Ma.V	Balangbalang
3	Laxmi Shrestha	Gaurishankar HSS	Ramechhap
4	Laba Subedi	Siddheshwar Ma.V	Gairathok
5	Pankaj jha	Kalikadevi Ma.V	Deurali
6	Pankaj Kumar Yadav	Sitaladevi Ma.V	Siruwari
7	Raj kishwar Yadav	Janakalyan Ma.V	Chyasku
8	Ramchandra karki	Renukadevi Ma.V	Baseri
9	Ratna bdr. Jogi	Hemaganga Ma.V	Sagutar
10	Ram Baran Mandal	Bhangeri Ma.V	Bhangeri
11	Dinesh Ku. Karki	Bhairavi Ma.V	Sunarpani
12	Anita Ghimire	Sarada Sanskrit Ma.V	Bbiyakharka
13	Dharbendra Yadav	Manthali Ma.V	Manthali
14	Navin Mishra	Nagakanya Ma.V	Manthali
15	Prem kumar Bhandari	Chandeshwari Ma.V	Gothpani
16	Pushkar Bhandari	Bhringeshwar Ma.V	Bijulkot
17	Aseshwar Mandal	Jhatteshwari Ma.V	Dhovi
18	Md.Mokhtar Alam	Nilakantheshwari Ma. V	Kathajor
19	Umesh patel	Nawadarsan HSS	Tilpung
20	Tilak Tamang	Ranjit Ma.V	Ngdaha
21	Raj kumar Khadka	Bhringeshwar Ma. V	Bijulkot
22	Kushhari Subedi	Tamakosi EBS	Manthali
23	Gobinda K.C.	Tamakosi EBS	Manthali
24	Rajendra dura	Manthali HSS	Manthali
25	Suman Shrestha	Manthali HSS	Manthali
26	Ganesh Bista	Setidevi Ma.V	Salu
27	Divakar Khadka	Tamakosi janajagriti HSS	Khimti
28	Tirtha prasain	Littlestar EBS	Manthali

29	Jamuna Mandal	Bhimeshwar rudra HSS	Chisapani
30	Kedar Roka	Sahidsmriti Ma.V	Saipu
31	Prem Narayan Shrestha	Janajagriti HSS	Betali
32	Gobinda Bahadur Khattri	„	„
33	Muna paudel	„	„
34	Ujjan kumar Dahal	Sarada HSS	Those
35	Chiranjibi Pandy	„	„
36	Niroj Paudel	Chandeshwari HSS	Saipu
37	Keshav Timalisina	Kamala Ma. V	Namadi
38	Dhal Bdr. Khadka	Tamakosi janajagrit HSS	Khimti
39	Harinarayan Shrestha	Prayageshwar Ma.v	Pakarbass
41	Rajesh karna	Rudrakshashwar HSS	Mugitar
42	RamUdgar Sah	Janata Ma,V	Rampur
43	Bhim Bdr. Manandar	Bhimeswar Prasun kadel Ma.V	Pakarbass
44	Ganesh KC	Bishnu janajyoti Ma.V	Makadum
45	Ramchandra Khattri	BuddhaBhawani Ma.V	Makadum
46	Santosh Babu Paudel	Tripushwar HSS	Duragau
47	Klyan KC	Krishna Puri Ma.V	Khaniyapani
48	Surya Manandar	Bal Ma.V	Khaniyapani
49	Hari Lama	Kakaling Ma.V	Doramba
50	Kamal Dahal	Chandeshwari Ma.V	Saipu

## Opinionnaire

Name of the teacher/respondents : .....

Academic qualification: .....

Teaching Experience: .....

Age: .....

Please give the tick marks (√) which you feel the best options, where,

S.A. = Strongly Agree, A = Agree, U = Undecided,

D = Disagree, and S.A. = Strongly Disagree



**Appendix A (I)**  
**Respondent's Answer**

**Opinionnaire**

**Class :**

**Name of Teacher :**

**School Name :**

**Content**

S.N.	Statement	SA	A	UD	D	SD	Total	MW
1.	Students have pre requisite knowledge of subject matter content knowledge.							
2.	Students are motivated to learn Mathematics geometrically,							

	meaningfully.							
3.	It is practicable to prepare lesson plan daily while teaching vector Geometry.							
4.	The subject matter is relevant, useful and illustrative.							

### Materials

S.N.	Statement	S.A	A	UD	D	S.D
5.	Computer support and teaching materials are available in school.					
6.	Teacher Guide book available in school.					
7	School is support and constructor to assist and help in making and using instructional materials.					

### Class management

S.N.	Statement	S.A	A	UD	D	S.D.
8.	Board is good and enough space in Mathematics classroom.					
9.	There a Mathematics laboratory or Mathematics lab in school.					
10.	Students are laborious , interesting and disciplined					
11.	School is well equipped with desk and bench in the classroom according to the number of student					

## Appendix- B

### Observation from

**Name of school:**

**Experience:**

**Level:**

**Date:**

**Time:**

**Content**

**Class:**

**Gender:**

**Phone No:**

**Topic:**

S.N.	Observation Point	Good	Neutral	Poor
1.	Initiation of the lesson			

2	Knowledge of teacher to subject matter			
3	Apply of appropriate teaching materials			

**Materials**

S.N.	Observation Point	Good	Neutral	Poor
4.	Using instructional material related to subject matter			
5.	Use of graph, chart, geo-board, flatten board			
6.	Others			

**Class Management**

S.N.	Observation Point	Good	Neutral	Poor
7.	Mathematics learning environment is good and interesting.			
8.	Control of classroom is good			
9.	Classroom activities are good			

**APPENDIX-C**

**Interview for the Teachers:**

**Name of the Teacher:**

**Name of the School:**

**Level:**

**Gender:**

**Date:**

**Phone No:**

**Time:**

**Topic:**

**Content**

1. Why are students not interested in Mathematics?

.....  
 .....

2. Why do the problems occur to teach mathematics to students?

.....  
.....

3. In your view, how can we teach mathematics to students meaningfully?

.....  
.....

4. Why do the teachers teach vector geometry without a lesson plan? What is the problem to make the lesson plan?

.....  
.....

5. Being a good teacher, what should be done to use the lesson plan in teaching?

.....  
.....

**Materials**

1. In your opinion, why are the computer support system and teaching materials are not available in schools?

.....  
.....

2. Why are the schools not supporting you in teaching learning materials?

.....  
.....

3. How can the teaching materials related problems be solved? What are the solutions?

.....  
.....

**Class Management**

1. Why are the mathematics labs not available in most of the schools?

.....  
.....  
2. How can we solve the mathematics labs related problem in the schools?

.....  
.....  
3. Why are the students not laborious, interested in study and disciplined nowadays?

.....  
.....  
**Thank you for your co-operation**