

## **Chapter-I**

### **INTRODUCTION**

This chapter provides information about the background to the study with a brief description of teachers' role in curriculum implementation and factors affecting curriculum implementation in Higher Secondary Level.

#### **Background of the study**

Mathematics as inseparable discipline of human life was initiated long before through the ancient human civilizations. In these days, when the men started living in a colony, country become imperative and the concept of number was gradually developed. The ancient civilizations namely Babylonian and Egyptian had contributed a bit on the development of mathematics as an exercisable discipline. Generally, engineering, surveying and counting were the basic subject matter of those days. Babylonian developed engineering and surveying for its protection from the Euphrates and Tigris river as well as tired to manage their dense population. Egyptian were contributed on astronomy and surveying. The development of mathematics passed its consecutive phases as the time passed. The subject mathematics was also included on teaching learning as vital need of development of human mind. It shows that mathematics has been developed through the human effort in different periods and has attempted this state still on the process of development.

Mathematics has always held a key position in the higher secondary level curriculum because it has been considered indispensable to the educated persons. In context of Nepal, mathematics teaching has been started through the ancient period with different curriculum and with changed objectives (NEPC). Sanskrit Sikshya and Budhdha Sikshya were two forms of education in the history where astronomy was included in teaching. Similarly, in the middle period of mathematics was used in for the development of 'Astronomy' as well

art. Those days, there were lacks of mathematics curriculum. Objectives of subject teachers, teaching methods instructional materials, and classroom were the major problems of the period. (Gautam, 2008)

Since the inception of the democracy in 2007 B S, the new concept and vision about education was emerged. In 2011 B S, National Education Planning Commission (NEPC) was constituted. The commission suggested that government of Nepal should improve the system of education and also brought a new concept that teachers must be trained for better education. In 2028 B S, the National Education System Plan (NESP) was introduced in Nepal which gave a new direction to the education system of Nepal.

NEC (National Education Commission) established in 2049 B S and changed the curriculum of mathematics according to the need of the present society. Changing curriculum can be described as the transformation of the curriculum scheme such as goals and objectives, content, design or it could be done in more minor sense by modifying the curriculum such as changing the learning activities. In fact, as to educate society towards the changes in the world, curriculum change is inevitable. Curriculum change, however, standing alone is not adequate for providing high quality of education rather there is a need for good implementers of those developed curriculums. In that sense, as teachers are the principal actors who transfer all those theoretical information into real classroom setting, whenever there is an implementation of a new curriculum, the issue of whether mathematics teachers are facing problems in the process of implementation or not are triggered. Teachers have roles in curriculum implementation in addition to other roles such as student guidance and discipline, respecting cultural diversity, establishing reciprocal relationship with families, creating a caring community of learners, teaching to enhance development and learning in the classroom.

In curriculum implementation in higher secondary level, both personal and environmental factors are effective. To illustrate, teachers, as human beings, bring their past experience into classroom settings so their beliefs regarding how students learn and develop affect the quality of the curriculum implementation. It was elaborated that if the teachers' existing belief structures were not consistent with the philosophy of the curriculum, then they affect the success of curriculum implementation adversely. Parallel to this study, another study found that teachers' beliefs about teaching and learning are strongly influencing the curriculum implementation. In other words, once the teachers are defending the ideology of the curriculum being implemented, then the performance of the teacher in the real classroom setting is affected positively during implementation.

Furthermore, besides appreciating the philosophy of the new curriculum, Park suggested that understanding of the curricula by the teachers is crucial for proper implementation. Because once the teachers do not comprehend what the curriculum's theoretical framework is in details, they will not be able to successfully implement the curriculum. On the other hand, it is claimed that teachers' personal characteristics have impact on the curriculum implementation. According to the study result, teachers characterized as motivated, open to changes and willing to try new learning opportunities are found high curriculum implementers compared to teachers described as unmotivated, not open to changes.

Moreover, a research claimed that teachers' appraisal of the change is significant for a good quality of curriculum implementation. In other words, openness to change creates a difference in curriculum implementation in a positive way. On the other hand, intrinsic factors such as knowledge of professional area, interest in teaching and motivation are significant features in

the delivery of program and can be barriers for proper curriculum implementation if there is inadequacy in any of those.

Lack of application of mathematics teaching in school level to real life situation has been a serious problem in many countries of the world. Even the most developed country like the USA has not got rid of this problem (Sonnabend, 1985). Consequently, a large number of high school graduates and adults cannot use in daily life the mathematics they have learned in school. Nor can they use it in their jobs (The Cockcroft Report. 1982). Furthermore the teaching of mathematics in School has not still been satisfactory. For example, the report of a survey carried out by the Department of Education and Science (DES) in England asserted that the teaching mathematics in many secondary schools was teachers dominated and pupils were not encouraged in creative thinking and enquiry (DES, 1979). The same thing was also found in Nepal. But in addition no instructional materials other than blackboard, 'chalk and student geometry box (while doing construction works) were used in mathematics teaching in Nepal (Shrestha et al., 1985).

Teachers are very important factor in overcoming the above mentioned problems. It is the teacher who can influence the attitude to mathematics of his pupils. And only by the hard work of teachers a mathematics curriculum can be successfully implemented. If the teachers are not well-qualified the successful implementation of a mathematics curriculum is unlikely. So it can be argued that one of the causes of these problems in the teaching of mathematics in school is the lack of well qualified teachers.

Thus it is quite reasonable to state that mathematics teaching has turned the numbers of phases as that of the development of mathematics, though the ancient period to now, number of teaching methods were advocated by the different mathematicians, psychologists, and others but none of them imposed the all the round satisfaction of the teachers and students on the practical aspect.

As a result, the teaching problems remained unsolved. There are various problems of teaching mathematics challenging for the teachers. In the context of Nepal, the physical problems of teaching can be counted, as the unavailability of textbook on the proper time, lack of knowledge and improper use of instructional materials, classroom problems. On the other hand, the psychological problems may be counted as the carelessness of subjects' interest, capacity, intuition and attitudes towards the subject and so on. It is well illustrate that adequate numbers of research studies had not been carried out on this field. So, the present researcher intends to study on the current teaching problems that are faced by the mathematics teachers of Higher Secondary Schools in Salyan district to the implementation of existing curriculum of mathematics prescribed by Higher Secondary Education Board.

### **Statement of the Problem**

Teachers and students are facing varieties of problems during teaching/learning process of different topics. Previous studies had given some evidence that the existences of the problems in mathematics are related to the lack of pre knowledge of mathematics curriculum in implementing actors. On the basis of these facts, the following problems were arised:

1. What are the problems that mathematics teachers face in the curriculum implementation of existing curriculum of Higher Secondary Education?
2. How do the problems arise to implementation of the curriculum?

This study has mainly concerned with the problem faced by Mathematics teachers at Higher Secondary Level in the implementation of existing curriculum of mathematics prescribed by Higher Secondary Education Board.

## **Objectives of the study**

The research has mainly taken its consideration with following objectives:

- To identify the problems faced by teachers to implementation of existing curriculum in the classroom at higher secondary level,
- To explore how the difficulties arise to implement the curriculum while teaching.

## **Significance of the study**

Better understating of mathematical concept requires a deliberate effort for both teacher and students. A good teacher must have the sound knowledge about various teaching learning strategies and implementation of the curriculum. He/ she must be aware of misconception about any topics held by learner. The following are the significance of the study.

- This study explains about the learning problems which are faced by mathematics teachers at Higher Secondary Level in implementation of prescribed curriculum of mathematics.
- It helps to create sound teaching environment with implementing prescribed curriculum.
- It helps in revising as well as designing mathematics curriculum of Higher Secondary Level.
- It helps to minimize the problems faced by teachers to implementation of the existing curriculum.

To sum up, this study aims to contribute to the literature by analyzing mathematic teachers' problems faced regarding curriculum implementation as well as finding out the reasons that as problems of teachers for implementing mathematics curriculum in higher secondary level.

## **Delimitation of the study**

Any study cannot overcome all the fields. All the higher secondary schools in Salyan district are taken accordance with resource convenience and the study result has based on responses of the teachers of those schools. Only Salyan district is selected as a sample district due to time bound, economic constraint and other hindering materials even though the result of this study has represent all the country. So, the result can be no more generalized. The following were the delimitation of the study:

- The study has limited on Higher Secondary Level mathematics teachers of Salyan district.
- This study has been concerned only with current problems faced by mathematics teachers at teaching of Higher Secondary Level in implementing mathematics curriculum.
- This study has taken only the mathematics teachers as key respondents.

## **Definition of the related terms**

**Problems:** Problems are that things which is difficult to deal with or to understand the subject matter during learning mathematics. In this study, the significance problems and difficulties of Higher Secondary Level mathematics teachers facing in teaching mathematics are the problems of the implementation of mathematics curriculum.

**Teacher:** The teacher who teaches mathematics at the higher secondary level in Salyan district.

**Physical facilities:** The physical aspect of class room is itself a physical environment of the classroom, which includes different variables such as classroom arrangement, seat patterns, equipments and materials.

**Higher Secondary Mathematics Teacher:** A teacher who completed masters' degree and teaches mathematics in Higher Secondary Level is considered as Higher Secondary Mathematics Teacher.

**Curriculum:** Curriculum refers to the set of courses designed for the students and teachers to achieve the fixed goal.

**Implementation of Curriculum:** To conduct the teaching activities in the classroom according to the prescribed curriculum of mathematics.



## Chapter –II

### REVIEW OF RELATED LITERATURE

It is essential to review the related literature to find the problems faced by higher secondary level teacher to the study which provides strong knowledge about the related topic. Different books, research reports, papers and other booklets can be found that concerns with problems faced in implementation of the curriculum, teaching instructional materials, classroom management, etc.

#### **Empirical Literature**

Koirala (1991), in a journal named *Tribhuvan University Journal*, has written an article entitled "A comparison of problems faced by mathematics teacher educators in developing and developed countries a case study of Nepal and England". He claims in his project that there is still a shortage of qualified mathematics teachers in schools in developed and developing countries. It may be because of the problems facing mathematics teachers in schools and the problems facing mathematics teacher-educators in colleges of education who are responsible in producing qualified mathematics teachers. Mathematics teachers and educators are more concerned about the former and the latter is usually neglected. This article tries to trace out the problems facing mathematics teacher-educators in both developing and developed countries on the basis of a study carried out in Nepal and 'a similar study in England. 15 out of 16 and 135 out of 247 mathematical educators in Nepal and England respectively took part in these studies. It was found that lack of books and journals, teaching facilities and aids and negligible grants for research or personal studies are the main problems for mathematics teacher-educators both in Nepal and England. However it was seen that the problems faced by mathematical educators in Nepal were more serious than those of England.

Shreshtha (1998), in his research "Problems and Issues of Higher Secondary Education" claims that teacher's availability is the major problems faced by Higher Secondary School. More than that, the trained teachers' availability is rare in the rural areas of Nepal. The major findings of this research were as follows:

- Most of the teachers in the Higher Secondary Level are part time teachers in comparison to regular teachers.
- There exist the problems of recognition.
- There is no coordination between ministry of education and Higher Secondary Education board.

HSEB (2000), itself has done a research on "Preparation of Higher Secondary School Teachers. The Findings of this study were drawn on the basis of factual records such as school survey form; opinion pooling, discussion with HSEB authorities, and other concerned authorities. This research claims that there is no use in providing training to the part time teachers; however they need to be oriented on the use of the curriculum in the right manner. Furthermore, it has commented that self-training approach through action research; study of professional journal, teacher exchange program and study tour would enhance the quality of teachers in their profession.

In another study, Wai-Yum (2003), tried to find out the problems of early childhood teachers experienced in the process of top-down curriculum reform at a local kindergarten in Hong Kong. The purpose of the study was to reveal the lived experience of the real people in real context. The qualitative method was used through individual and focus-group interviews.

Acharya (2006), did research on the topic "A study on the problems faced by Higher Secondary School teacher in teaching mathematics of grade XI". It was descriptive survey and questionnaires were used for data collection. Fifteen Higher Secondary School's of Kathmandu district were chosen for this study.

Among the 15 teachers, there were 7 trained and 8 untrained teachers as the respondents. The main objectives of this study were to identify the problems face by Higher Secondary Schools mathematics teachers and compare the problem face by trained and untrained teachers. He concluded that prescribed curriculum, and existing test book were not well planned, sequential and practical problems not well managed. On the part of trained and untrained teachers it was found that both were similar kinds of problems in Kathmandu.

Sharma (2007) conducted a research entitled “A study of curriculum standards: implication of the desire and the existing standards for the reform of mathematics education in Nepal”. In this study, the researcher was used the standard appraisal form, observation notes, interview as an instrument and exploratory and descriptive research with stratified random sampling approach of data collection was used. Thirteen districts were taken as the sample district which sample consist 400 teachers. Among them, 260 teachers were taken as the respondents and the collected data were analyzed and concluded that:

- To bring reform in implementing education in Nepal in present world context.
- It is necessary to sketch mathematics curriculum standards.

This study has ascertained the desired curriculum standards of mathematics for higher secondary level and analyzed the situation to the practiced ones.

Erden (2010), in his research entitled "Problems that Preschool Teachers Face in the Curriculum Implementation" claims that preschool curriculum should be revised. The sample of this survey study consisted of preschool teachers working in both selected public and private preschools and kindergartens from the different regions of Ankara. Population of the study was all the preschool teachers in Ankara. According to the list taken from Provincial Director ate of National Education in Ankara, based on the selected schools, the sample was composed of 223 preschool teachers working in public and private

schools in the center of Ankara during the education year of 2009-2010. The mentioned schools were the ones which are under control of Ministry of National Education (MONE) and responsible for implementing the curriculum published by MONE in 2006.

This study aimed at investigating the challenges preschool teachers face in the curriculum implementation and whether these challenges differ in relation to teachers' level of education, department they graduated from, the type of the school they are working in, teaching experience and level of in-service training. In addition, in this study, it was also aimed to find out the underlying reasons of most frequently stated issues of implementation from the teachers' perspectives. In fact, no matter what factors cause the problems, it is certain that they affect educational environment of the classroom or the way of implementing the good quality of curriculum. In other words, the teachers' problems and difficulties creates an adverse effect on the quality of the curriculum implementation, there is a need for understanding what possible problems teachers are encountering with and taking necessary precautions to eliminate the effects of those problems on implementation.

Budha (2012), did a research on the topic "Problems faced by teachers in teaching mathematics at basic level". It was descriptive survey and questionnaires were used for data collection. Thirty basic level schools of Jumla district were chosen for that study. The main objectives of the study were to identify the problems faced by mathematics teachers in teaching mathematic at basic level and compare the problems faced by basic level mathematics teachers in teaching at community based and institutionalized schools. He conclude teaching learning activities, evaluation, students background and psychological, curriculum and test books, Physical facilities it was found that both were facing similar kind of problems in Jumla district.

Nisar and Malik (2012), in an article "Teaching of mathematics in Pakistan: problems and suggestion". The main goal of his study was deals basically with the knowledge of the content of elementary schools mathematics. The design of his study was survey. Ten boys and ten girls were selected randomly. The major tool of his study was questionnaires. They concluded text book should be ascending to the need and requirements, basic concept and graphs should be more emphasized along with solved examples, a chapter on computer should also be added in the book.

Sah (2012), did a research on the topic "problem faced by HSE teacher in teaching basic mathematic of grade XI". The main objectives of his study were to find out the problem faced by HSE mathematics teachers in teaching mathematics of grade XI. The design of his study was survey. He took fifteen schools which were seven trained teachers and eight untrained teachers. He concluded that trained and untrained teachers was facing various problems related curriculum and text book, school management, nature of students, more and less problems are facing trained and untrained mathematics teachers.

Bhatt (2013), did a research on the topic "Problems faced by mathematics teachers in teaching mathematics". The main objectives of his study were to find out the problem faced by teachers in teaching at secondary level. The design of his study was survey. He took 48 private schools and 117 public schools for his research. He selected the teachers by stratified random sampling. The major tools of his study were interview schedule. He concluded problems related to heterogeneous classroom, related to contain, classroom management, pedagogy, Instructional materials and administration etc. are the main causes of the problems faced by mathematics teachers.

By Summing up these all empirical theories evidence have been shown possible factors of the research questions, however, they find out the problems of the research issues deeply. In considering these issues this study will try to

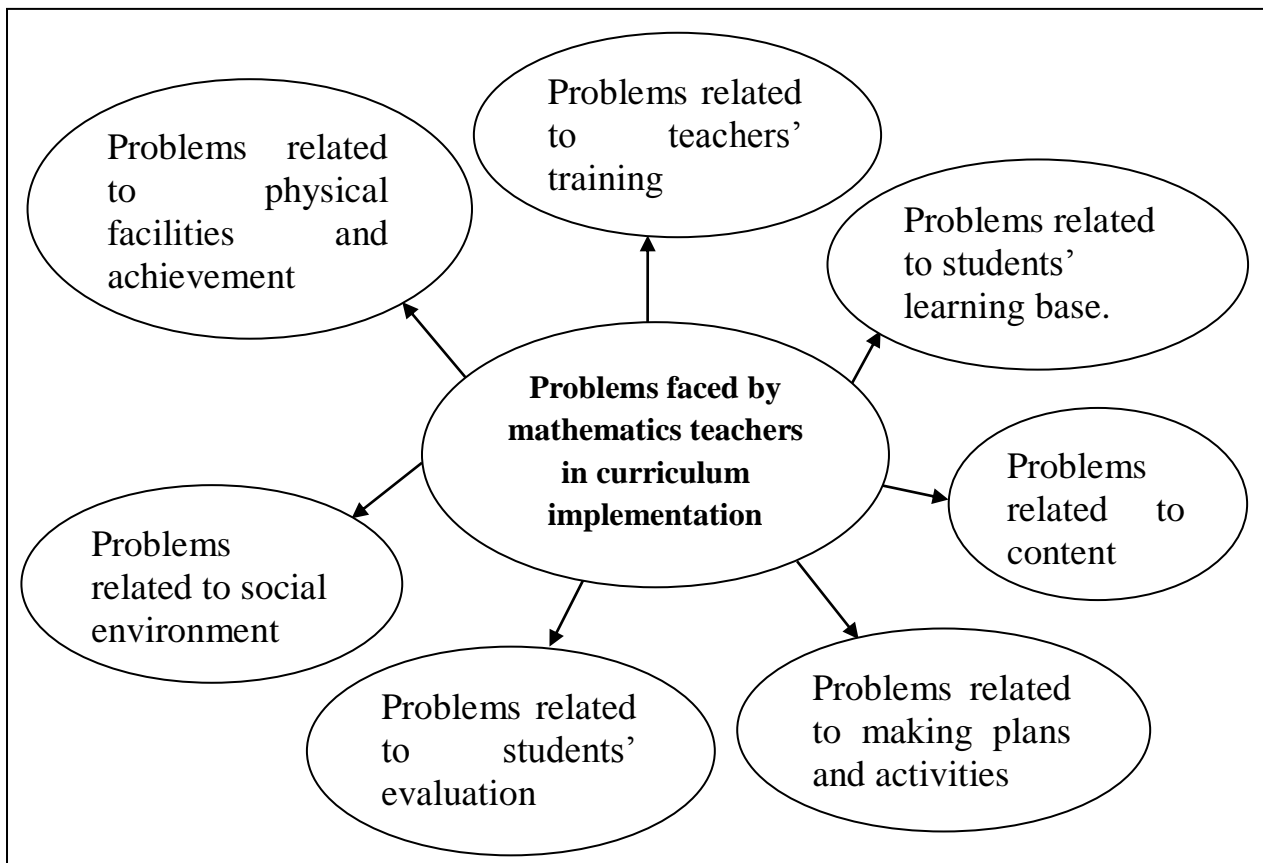
find out effectiveness problems of teachers that are facing in current time in teaching mathematics to implement the curriculum of mathematics of higher secondary level.

### **Conceptual Framework**

This study related to the different problems of teachers who are facing curriculum implementation at Higher Secondary Level. Therefore, the present researcher has used following conceptual framework for completing this study.

In teaching learning process of mathematics for implementation of the curriculum is one of the main functions of the teacher since the curriculum is a run way to reach a goal (Maharjan et al., 2001). Thus, to achieve a goal or to fulfill the objectives mentioned in the curriculum through the teaching of mathematics teacher faced or concerned different factors. These factors are interrelated to each other. So, this conceptual framework, the researcher has concerned the factors which are pictured as below and on the basis of these factors, the data were collected and from analysis to conclude the problems that were faced by the teachers of higher secondary school to implement the curriculum of mathematics.

**Figure 1. Factors that as problems faced by teachers in curriculum implementation.**



There were various problems that are faced by the teachers to implement the curriculum in higher secondary level. But in this study, the problems are categorized into seven groups and each group consist six statements which carries the problems faced by the teachers. By analyzing the responses on these problems, the conclusion can be carried as the theme for the problems faced by the teachers in implementing curriculum of mathematics in higher secondary schools.

Due to lack of concept and skill for implementing curriculum, teacher cannot fully success to implement in his/her classroom. The time bound (completion of courses) teachers cannot follow the curriculum thoroughly. Due to exam orientated teaching strategies in higher secondary schools the teachers

also follow this scheme as the schools and students constraints. The evaluation system also affect to implement the curriculum because the paper setting is not properly based on each chapter and units so teachers should need to teach these topics in which questions are asked in examination.

Students learning process varies according to their in-born nature and nurture they acquired. Similarly, the abilities of the pupils also affect that they learn. The most important thing in learning is to provide the learning environment at school and home that is fundamental rights of the students but the real scenario in Nepal is not as it should have been. Sometimes, teachers don not understand the hidden problems of the students and parents do not take the environment to provide their children due to different reasons as a result students deprived of the appropriate learning.

The contents designed in the existing curriculum of the higher secondary level is somehow satisfactory but the curriculum needs to be understood by the teachers and make the students understand as a theory only which means even the teachers do not find it as practical in their daily life as it should have been.

As a preparation of the teaching matters, it is not as satisfactory as it should have been due to different internal and external factors. Although school administration and teachers prepare the annual plans at early of the academic calendar, it becomes hypothetical due to strikes, unplanned holidays and other circumstances as a result courses are not run as plans. However, teachers feel comfortable delivering contents following the daily plans as they are immediate actions.

The teachers have maintained the students' evaluation process what they can but the different systematic records of the students and use of portfolios is not found for the transparent evaluation process.



Due to proper management of the school administration, sometimes, students are not taught real life situation type education. Very few schools have managed extra (assistant) teacher to cover up the classes where the teachers absent. Similarly, the necessary materials have not been found to assist teaching learning process which results the effectiveness that support for the implementing of curriculum.

Due to the greater number of students, the classrooms are not sufficient and teachers feel difficulty while delivering the contents to cover the curriculum as designed. Similarly, the teachers found the curriculum not matching with the local needs of the students and teachers themselves.

## **Chapter –III**

### **METHODS AND PROCEDURES**

This study is concerned with the study of problem faced by Higher Secondary Level mathematics teachers in the curriculum implementation. This chapter presents the procedure of the study which is carried out to find the problems faced by Higher Secondary Level teacher in the curriculum implementation. It explains the design of the study, sample and method of sampling, tools, and data collection procedure and data analysis.

#### **Research Design of the study**

Research design is the heart of research. This research would be survey and descriptive in nature with analyzing quantitative data from the field survey. The main object of the research is to find the problems faced by Higher Secondary Level mathematics teachers in the curriculum implementation.

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

The study has been conducted all Higher Secondary Schools in Salyan district. The total numbers of higher secondary school were twenty three. Among them, fifteen schools have included mathematics related subject. So, fifteen schools of Salyan district and the mathematics teachers of these schools have been the targeted population. Therefore, 42 teachers who are teaching mathematics at Higher Secondary Level were the total populations.

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

The sample of the study has been selected from Salyan district using census method. So, all the mathematics teachers of Salyan districts are the key respondents. All the respondents have categorized into two different categories according to the location: Urban and Rural. Interview has been conducted with 8 different teachers who were selected from random sampling method. Among them, 4 teachers were urban and 4 teachers were from rural area.

## **Data Collection Instruments and Tools**

Interview schedule and questionnaire have been taken as major tools of this study. The interview schedule has been prepared in structured form for the key respondents to obtain the ground reality about the problems faced by the teachers in implementation of curriculum in teaching learning mathematics. Also questionnaire have been administered on the key informant as well as to find out teaching problems of teachers in the implementation of present curriculum of higher secondary level of HSEB.

## **Reliability and Validation of Instrument**

Since the problems faced by teachers to implementing the curriculum of mathematics are seems common in the most of the communities and countries or any other areas, so, the questions in the questionnaire have been collected from a research done in Ankara, Turkey by Emine Erden entitled “Problems That Preschool Teachers Face in the Curriculum Implementation” (Erden, E. 2010). Some questions collected from there are modified and corrected according to the Nepalese context.

Before finalizing the instrument, items were piloted on two higher secondary schools of Dang district where mathematics is taught. The piloting was done three mathematics teachers of these two schools. Despite the several attempts, the researcher was able to collect 42 questionnaires. Finally, researcher showed questionnaire to the supervisor for validity. Thus, the questionnaire was prepared for the final administration.

## **Data collection procedure**

The researcher has distributed the prepared questionnaire to 42 mathematics teachers of 15 Higher Secondary Schools and all respondents returned the filled questionnaire. The questionnaire were distributed and collected by the researcher himself and with the help of friends and teachers.

Questionnaire helps to provide the objectives of this study. The questionnaire has provided the quantitative data which help to find the core problem of the teachers in the implementation of the mathematics curriculum. Among 15 Higher Secondary School teachers, the researcher has visited 8 schools where mathematics is taught and meets the headmasters and mathematics teacher of the respective schools and also takes permission for the interview with teachers. Then, Mathematics teachers of these high schools have been consulted and the objectives of this thesis study have been clarified. The Higher Secondary School has been selected from rural and urban areas. Out of 8 schools, 4 teachers from urban areas and 4 teachers from rural areas has been selected for interview. After that, in depth interview has been taken on the respondents to attain valid data.

### **Scoring Procedure**

For the analysis of the items, weightage of 5, 4, 3, 2, 1, have assigned to statement ‘strongly agree’, ‘agree’, ‘undecided’, ‘disagree’ and ‘strongly disagree’ respectively. Mean weightage has been calculated, total score of five point Likert scale is 15, thus its average score is 3. If the calculated index is greater than 3, then it is concluded that the statement contains in strong favor to the problem (Sah, 2012). If the index measure is less than or equal to 3, then it is weak favour to the problems.

### **Analysis of the data**

All information are collected from primary sources. Collected data has been scored with the help of Likert's five point scale. The quantitative data has been collected from questionnaire. Simple percentage and mean weightage have been used to analyze and interpret the data. The qualitative data has been collected from interview. The researcher has categorized the information obtained from interview into different problems faced by mathematics teacher in Higher Secondary Level schools the curriculum implementation. It has

helped the present researcher to reach in the conclusion. Simple percentage method shows that how many percents are agreed with the items and how many percentages are disagree with the items. This presents the clear and straightforward of the collected data for the fulfillment of the research.

The data obtained from questionnaire has analysed and interpreted with the help of following statistical techniques:

Mean weightage has been used to locate central position of the responses to the statements of teachers as a whole in the rating scale. The average means weightage has calculated as following:

$$\text{Mean Weightage} = \frac{\text{Total rank score of statement}}{\text{Number of teachers}}$$

Each statement has studied in terms whether the teachers' problems are up to the index or not. If the calculated mean weightage is greater than 3, then it is concluded that statement indicates the problems and it is favorable to it. If the mean weightage is less than or equal to three, then it is unfavorable to the problems.

## **Chapter - IV**

### **ANALYSIS AND INTERPRETATION OF DATA**

This chapter deals with the analysis and interpretation of the collected information from the questionnaire and interview schedule which has helped to fulfill the needs of the present research. The questionnaire has provided to all the respondents and interview has taken to the selected respondents from census sampling methods. These collected data has been analyzed and interpreted by applying the statistical tools percentage and mean weightage have been used. In other words, the collected data has been tabulated and analyzed according to the objectives of the study. The tabulated data have statistically analyzed and interpreted by using statistical tool mean weightage.

The researcher has used interview schedule with teachers. The interaction with the respondents has categorized according to their category and then different themes have been given in text of interview. Finally, these themes have been summarized. The questionnaire to the respondents have been included the forty two items in seven category which focused the problem faced by teachers in the implementation of Higher Secondary Level mathematics curriculum. Each category consists of six questions.

The whole data has been categorized into seven groups: teachers' training, students learning base, content, making plans and activities, students' evaluation, social environment and physical facilities and achievement. Thus, the collected information has analyzed and discussed under the following categories which affect the curriculum of mathematics and its implementation:

- Problems related to teachers' training
- Problems related to students' learning base
- Problems related to content
- Problems related to making plans and activities
- Problems related to students' evaluation

- Problems related to social environment
- Problems related to physical facilities and achievement

### **Analysis and Interpretation of Teachers’ Responses on Problems Related to Teachers’ Training**

This part consisted of a set of questions related to the problems created by the lack of training in mathematics classes in general. The data obtained from the teachers and analyzed and interpreted separately.

The course of content is changed according to the passage of time but the same teachers are compelled to teach the revised curriculum without prior training which created the obstacle on the path of implementing the revised curriculum in the classroom. Trained and skilled teachers can only able to implement curriculum in class. Some teachers have not concept and skill for implementing curriculum. So, there is the need of training to the teachers for providing the skillful implementation of curriculum.

The teachers had provided with a set of questions related to the problems regarded due to the training. The item wise analysis and interpretation of the data obtained the teachers is presented below:

**Table 4.1 Distribution of Teachers’ Responses Related to Teachers’ Training**

S. N.	Statement	Mean Weighted	Remarks
1	Using Appropriate Teaching Methods and Techniques	4.00	Yes
2	Creating Learning Centers	3.98	Yes
3	Directing Students to Think with Open Ended Questions	3.33	Yes
4	Using Knowledge and Information Technologies	3.93	Yes

5	Encouraging Students' Active Involvement	2.30	No
6	Being Flexible During Implementation	2.21	No

The above mentioned table shows that the respondents face more problems due to the lack of training. The first statement “Using Appropriate Teaching Methods and Techniques” is agreed by 80.95 % respondents. The mean weighted of this statement is 4.00 which indicate that problem related to teacher’s training has more impact in the curriculum implementation in the classroom.

The second question has tried to find the problem faced by teacher in the process of “Creating Learning Centers”. The mean weighted of this statement has 3.98 which also indicate that teachers feel problem in creating learning center in school.

The third statement “Directing Students to Think with Open Ended Questions” refers that it is a problem of teachers due to the lack confidence in front of the students. Out of 42 respondents, 30 respondents’ response is undecided whether it is great problem or not.

The fourth statement “Using Knowledge and Information Technologies” is creating problem for the teachers because 71.43% respondents replied that they are agreed to the statement. The mean weighted of this statement is 3.93 which indicate that this is the problem faced by the Higher Secondary Level mathematics teachers in curriculum implementation.

Similarly, the fifth statement “Encouraging Students' Active Involvement” implies that the problem covered mean weighted is 2.30.

The sixth statement “Being Flexible during Implementation” covers mean weightage 2.21. These two statements are not the big issue which creates the problems for teachers.



Out of six statements related to training, 4 statements are taken as the problems by respondents and 2 are considered as the easier than other. This shows that the trained teachers have not got sufficient place to implement their acquired learning and skills due to lack of proper management. There is the lack of information technology. If available, the problem created how to use this technology in the implementation of curriculum while teaching in classroom. So, there is the strong need to provide space to improve the curriculum implementation in classroom.

**Analysis and Interpretation of Teachers’ Responses on Problems Related to students’ learning base.**

Students’ learning is especially depended upon the active participation of the students in teaching learning activities. This also affect the process of implementing curriculum in the classroom. So, the teachers face problems due to the students’ base. Respecting individual differences, learner centered process planning and doing activities to foster students' social emotional intelligence are the major problems of this category. The following table presents the real scenario of the teachers’ responses related to students’ learning base.

**Table 4.2 Distribution of Teachers’ Responses Related to students’ learning base**

S. N.	Statement	Mean Weighted	Remarks
7	Respecting Individual Differences	3.19	Yes
8	Awakening Students' Curiosity	3.83	Yes
9	Learner Centered Process Planning	3.45	Yes
10	Doing Activities to Foster Students' Social Emotional Intelligence	3.1	Yes
11	Fostering Students' Creative Thinking Skills	2.69	No

12	Encouraging Students to Involve in Activities Based on Cooperation	2.26	No
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The above mentioned table presents the problem faced by Higher Secondary Level mathematics teacher in the mathematics curriculum implementation which are related to students' learning base. The statement "Respecting Individual Differences" is a problem because the mean weightage of this statement is 3.19.

Even though, the statement "Awakening Students' Curiosity" is not taken as the problem by the teachers. Out of 42 respondents, 26 respondents have responded that they are agreed with the problem of Awakening Students' Curiosity. The mean weightage of this statement is 3.83.

The next statement "Learner Centered Process Planning" carries 3.45 mean weightage which refers that this is the problems faced by respondents while implementing curriculum in the classroom.

Even though half the respondents are undecided whether it is the problem or not, but mean weightage shows that this is a problematic statement. Similarly, the statement "Doing Activities to Foster Students' Social Emotional Intelligence" is another problem which carries 3.1 mean weightage.

The statement "Fostering Students' Creative Thinking Skills" is taken as a good point which is not the problem faced by teachers while implementing the curriculum. The mean weightage of this statement is 2.69, in which about 62 percents are disagreed with this statement. This means that most of the respondents do not take as a problem.

The last statement of this section "Encouraging Students to Involve in Activities Based on Cooperation" does not take as a problem by the respondent. More than 75 percent respondent are disagreed that this is the serious problem

faced by teacher while implementing the curriculum. The mean weightage of this statement is less than 3, which also indicate that most of the respondents are eligible to encourage students to involve in activities based on cooperation.

In this way, the above mentioned table shows that there is the mixed result which is presented by the respondents. Out of six questions related to students' learning base, 3 questions are taken as problems by respondents. This implies that there is the necessity to solve the remaining problems for the successful implementation of curriculum in Higher Secondary Level.

### **Analysis and Interpretation of Teachers' Responses on Problems Related to course of study**

Content plays vital role in the teaching learning process for especially in mathematics teaching. If the content of the mathematics books represent the need and interest of the child and related to new situation of the world, then teaching and learning process is effective. So the content of the course depends upon what the students would like to study. The content is also taken as the heart of the every teaching learning activity. What the students get and what the teachers teach is mainly measured by the content what they grasped.

This part consisted of six set of questions related to content in mathematics of higher level. The data obtained from the teachers are analyzed and interpreted separately. This following table presents the outcome of the research and analyzed and interpreted the obtained data from questionnaire.

**Table 4.3 Distribution of Teachers' Responses Related to course of study**

<b>S. N.</b>	<b>Statement</b>	<b>Mean Weighted</b>	<b>Remarks</b>
13	Relevancy of the content	2.57	No
14	Usefulness of daily life	3.76	Yes
15	Teaching hour for all content is enough	1.88	No

16	Presentation of the subject matter	3.98	Yes
17	Theoretical aspect of the content is suitable	3.83	Yes
18	Teaching hour for each topic is enough	2.19	No

Out of six set of questions fall under this category which represents the problem of teachers related to course of study.

The statement “Relevancy of the content” carries 2.75 mean weightage which indicates that this is not the problems for the teachers while implementing the curriculum in the classroom.

Similarly, “Usefulness of the daily life” carries 3.76 mean which means it has problem. The curriculum of the higher secondary school is not behavioristic for the daily life of the teachers and students as well.

“Teaching hour for all contents is enough” carries 1.88 mean which means the respondents have responded that there is not any problem.

Similarly, “Presentation of the subject matter” carries 3.98 mean and it implies that most of the respondents have responded it as a problem as the curriculum is in English language and students coming from government schools background do not catch it as the curriculum defines.

The statement “Theoretical aspect of the content is suitable” carries 3.83 which implies it as a problem. The most of the respondents have answered it that they didn’t get favorable in their teaching learning process.

Most of the teachers are agreed that teaching hour for the content is enough for them. This refers that the statement “Teaching hour for each topic is enough” does not falls under the problematic category while implementing the curriculum of Higher Secondary Level.

## **Analysis and Interpretation of Teachers’ Responses on Problems Related to plans and activities**

Teachers planning and activities are also determining factors of quality education. If teachers are not well prepared for the class, if he does not prepare daily lesson plan and annual plan, he faces a lot of difficulties while implementing the curriculum in the classroom. If s/he is well prepared, he provides the quality education to the school.

**Table 4.4 Distribution of Teachers’ Responses Related to plans and activities**

S. N.	Statement	Mean Weighted	Remarks
19	Preparing Annual Plan	3.6	Yes
20	Preparing Language Activities	3.48	Yes
21	Preparing Art Activities	3.31	Yes
22	Designing Reading And Writing Practices	3.17	Yes
23	Developing Materials for Activities	2.67	No
24	Preparing Daily Plan	2.9	No

The statement 19 under this topic is intended to find out the respondents opinion regarding whether the statement “Preparing Annual Plan” is problem or not for the teachers in implementing mathematics curriculum in Higher Secondary Level. The responses obtained from the respondents are 14.29 percent of the respondents are completely agreed, 47.62 agreed, whereas 23.81 percent respondents are undecided, 9.52 percent respondents are disagreed and 2.38 percents completely disagreed. This shows that the statement is falls under the problematic category which carries 3.6 mean.

The next statement “Preparing Language Activities” carries 3.48 mean which implies that this statement is the major problems faced by the Higher Secondary Level mathematics teachers while implementing curriculum.

Similarly, the statement “Preparing Art Activities” is also taken as the problem by the respondents. The responses obtained from questionnaire shows that 47.62 percent respondents are undecided whether it is a problem or not. Whereas 40 percents are agreed and 2.38 percent are strongly agreed which implies they have taken this statement refers to the problem.

The statement “Designing reading and writing practice” carries 3.17 mean and it implies that the teachers are unable to create these activities for the further practice of the contents delivered.

The statement “Developing Materials for Activities” carries 2.67 mean and it implies that there is no problem in it.

Similarly, “Preparing Daily Plan”, carries 2.9 mean which implies it also doesn’t consist any problem.

In this way, out of six questions of this category, 4 set of questions are problems for the Higher Secondary Level mathematics teachers in the implementation of curriculum whereas two set of questions are not taken as the problematic.

### **Analysis and Interpretation of Teachers’ Responses on Problems Related to students’ evaluation**

The item of this category tries to find the problems faced by Higher Secondary Level mathematics teachers in the implementation of curriculum in classroom due to the evaluation of students. The diverse background of the students created the problem. More than that, preparing portfolios evaluating plans, keeping anecdotal record and supervision are major problems faced by teachers in the implementation process.

The respondents have provided six questions whether these are problems for them or not. The questions are related to the problems students' evaluation.

**Table 4.5 Distribution of Teachers' Responses Related to students' evaluation**

S. N.	Statement	Mean Weighted	Remarks
25	Preparing Portfolios Evaluating Plans	3.34	Yes
26	Keeping Anecdotal Records and supervision	3.93	Yes
27	Evaluating Students	2.12	No
28	Keeping Observation Records	3.26	Yes
29	Qualification of Teachers	2.19	No
30	Background of the students	3.95	Yes

The respondents are requested to show their response on the statement 25 to whether preparing portfolio evaluating plan is the problem faced by secondary level mathematics teachers in implementing curriculum or not. The actual problem presented with respondents is "Preparing Portfolios Evaluating Plans". The responses obtained from the respondent carries 3.34 mean weightage. This shows that teachers have faced the problem on this issue.

The next question is another problematic statement for the respondents. The question is whether "Keeping Anecdotal Records and supervision" is problem or not. The data obtained from the questionnaire shows that 4.76 percent respondents are strongly agreed with this statement and 83.33 percent respondents are agreed with the statement. This shows that this statement is taken as the problem by teachers.

The respondents replied that they do not face any difficulty in the students' evaluation. They can easily find out who is poor in class and is talent in mathematics class. The data obtained from questionnaire shows that the

mean weightage is 2.12. Half of the respondents among total respondents are strongly disagree that this is a problem faced by them. The data shows that 4.76 percent are strongly agreed, 19.05 percent are agreed and 9.52 percent are undecided.

The next question includes the problem of keeping observation records. The data shows that respondent face difficulty in this query. The mean weightage i.e. 3.26 itself shows the problem. 64.25 percent respondents are agreed that keeping observation record is problematic because of the number of students and unavailability of time.

Similarly, the next questions related to the qualification of the teachers. The respondents replied that there are not any problems arisen due to the qualification. All teachers replied that they are well qualified to teach in Higher Secondary Level. The data obtained from questionnaire itself shows the same result. The mean is 2.19 and more than 67 percent respondents are disagreed with the questions, this means that they do not take the qualification of the teachers is the problem in implementing the Higher Secondary Level mathematics curriculum.

The statement “Background of the students” carries 3.95 mean and it implies that the background of the students seems to be poor to cover the course. 90.48 percent respondents agreed that the background of the students hampers the teaching learning process.

The above mentioned description shows that out of six questions asked in this category, the respondents replied that 4 questions are the problems while 2 questions are not the big problems faced by the Higher Secondary Level mathematics teacher in implementation of curriculum.



## **Analysis and Interpretation of Teachers' Responses on Problems Related to social environment**

Environment is the totality of the education atmosphere at home and school as well as society. Home is regarded as the first school for the children from where they learn manner, behaves and other from family. School is the second home for the students from where they learnt quality education. As we are the social animal and live in society, the social environment affects all our daily activities. The teaching and learning too have no exception of it.

This part of analysis deals with the Environment related factors that affect the teachers in the implementation of curriculum in Higher Secondary Level. Social environment plays the pivotal role in the process of teaching learning activities. So, the teachers need to be more conscious about the social environment. The following table shows the teachers' responses on problems related to social environment. In college and school, the colleagues, school administration and teachers are the key member of the society. So, the tripartite relationship between these members should be maintained to save the teachers from the problems in the process of curriculum implementation of mathematics in Higher Secondary Level. The following table presents the problems of teachers' responses related to social environment:

**Table 4.6 Distribution of Teachers' Responses Related to social environment**

S. N.	Statement	Mean Weighted	Remarks
31	Making Cooperation With Colleagues	1.67	No
32	Lack of Assistant Teacher	3.07	Yes
33	Inadequacy In Classroom Materials	3.21	Yes
34	Lack of Helping Friends	2.71	No

35	Making Cooperation With School Administration	2.76	No
36	Develop skills on formulating problems for real world situation	3.95	Yes

Out of six questions in this section, half of the questions are taken as the problems by the respondents. This section includes the questions related to social environment. The questions “Making Cooperation with Colleagues” is taken as the simplest questions by the respondents. The mean 1.67 also indicates so. More than 75 percents respondents are disagreed with the questions that it is a problem for them.

The next question “Lack of Assistant Teacher” is taken as the problems by respondents. The mean of 35 this item is 3.07. Even though only 35 percents respondents have taken this as a problem.

Similarly, the next item “Inadequacy in Classroom Materials” is also taken as a problem by teachers, the mean weightage 3.21 also shows it. Among the respondents, more than 66 percents respondents are undecided whether it is a problem or not.

The next question “Lack of Helping Friends” is not taken as a problem. The mean weightage of this item is 2.71. Among the respondents, more than 57 percents respondents are disagreed that it is great problem for them. More than 25 percent respondents are taken it as problem. But the mean weightage shows that it is not a problem faced by teacher while implementing the curriculum in classroom.

The item no, 35 is not the problem for respondent. The item includes a question called “Making Cooperation with School Administration”. The data shows that the respondents can easily make cooperation with school

cooperation. The data shows that 45 percent respondents are undecided, 40 percents are disagreed, and 14 percents are agreed.

The last questions of this category include the questions related to develop skills on formulating problems for real world situation. The data shows that more than 95 percent respondents are agreed with the questions and mean weightage is 3.95.

In this way, this category of questions includes the problems related to environment. Among the six questions asked to the respondents, three are taken as a problem. Making colleagues and cooperation with the school administration are not taken as problems and other questions are the problem while implementing the curriculum in classroom.

### **Analysis and Interpretation of Teachers' Responses on Problems Related to physical facilities and achievement**

The physical facilities available in the school surrounding are the major influential factors in teaching learning activities. Classroom management plays vital role in teaching learning process. Until the good management of classroom of classroom, no teacher can teach effectively, no teacher can teach effectively.

**Table 4.7 Distribution of Teachers' Responses Related to physical facilities and achievement**

S. N.	Statement	Mean Weighted	Remarks
37	Lack of relax time	2.95	No
38	Small classroom environment	3.02	Yes
39	Crowded classroom	3.02	Yes
40	Fulfillment of the goal of mathematics curriculum	3.64	Yes

41	Selecting goals and objectives from all developmental areas	3.62	Yes
42	Based on local needs	3.93	Yes

The above mentioned table shows that the physical facilities available in the school are the major factor which determines the teaching learning activities.

The questions of this categories “Lack of relax time” carries 2.95 as mean which implies that it has not any problem. The teachers get sufficient time for preparation.

Similarly, the statement “Small classroom environment” carries 3.02 mean and it is taken as one of the problem in implementing curriculum in remote areas of the schools. Although the numbers of the students is not satisfactory in higher secondary schools, students have to study sitting in junior classes where they do not fit in benches, desks and boards.

The statement “Crowded classroom” carries 3.02 mean and it implies as the problem faced by the teachers while implementing the curriculum. The environment of the schools is crowded due to being near of the motorways whereas in some cases the school environment has not been managed and they have to sit near of the community like water mills, other factories etc.

“Fulfillment of the goal of mathematics curriculum” carries 3.64 mean and it implies as a problem due to lack of regularity of the students in class because of strike, seasonal migration in India and other cities of our country and sometimes early marriage of the pupils.

“Selecting goals and objectives from all developmental areas” carries 3.62 mean and it also implies as a problem. The students after higher education do not continue their study due to poverty, early marriage and other social and

family boundaries which affects the developmental goals of the nation and whole curriculum.

“Based on local needs” carries 3.93 mean. The curriculum has not been designed to fulfill the local needs as the students have to study the course that is theoretical more and practical less.

So, the present researcher reach in the conclusion that physical facilities is the most important factor which help to determine whether quality education is maintained by the school or not. So, the school environment is necessarily managed to provide the quality education. In this research too, the respondents replied that the physical facilities are most important factors.

### **Analysis of information obtained from interview schedule**

The semi structured interview has the features of both structured and unstructured interview. The researcher took the interview on the basis of the first objectives i. e. to find out the problem faced by Higher Secondary Level mathematics teachers in the implementation of curriculum. The researcher took the interview with the selected teachers and the interview guidelines are presented in Appendix B.

This tool has used for the qualitative information. The 8 teachers have been participated in interview. The interview schedule contains the semi-structured questions that selected to questions to questionnaires. So these questions in interview help to checking between the results affected questionnaires and interview and that supported to generalize the real situation. Questions have been separated in different six groups which try to explore the ground reality of the problems faced by Higher Secondary Level mathematics teachers in curriculum implementation. These groups are: Qualification and training, content, student’s background, time schedule, problems of teaching on the basis of curriculum and availability and use of curricular materials other

than the text as mentioned in appendix B. The information collected from interview are analyzed below.

In the interview schedule, the questions are categorized into six parts: qualification and training, content, students' background, time schedule, problems of teaching on the basis of curriculum and availability and use of curricular materials other than text. These questions are especially focused on the problems faced by Higher Secondary Level mathematics teachers in teaching mathematics.

The data obtained from interview schedule shows that most of the teachers are well qualified and they said that they are eligible in teaching mathematics in Higher Secondary Level. The question "have already been completed the required qualification to teach in Higher Secondary Level?" is asked to the teachers, and only 25 percent respondent responses "NO" even though they also said that they are well trained and eligible to teach in Higher Secondary Level mathematics. When the researcher asked about the training they got, the entire respondents have replied that they are well trained for the secondary level but they do not get any kind of training for teaching in Higher Secondary Level. One of the respondent said that he got training on how to implement the Higher Secondary Level mathematics in classroom, when he was in Kathmandu. This shows that there is the need of training for the teachers in the teachers to solve the problems what the teachers face while implementing the curriculum in the classroom.

The researcher has also intended to know the relevancy of the content in the present society and its application in the daily life. In this query, most of the respondents do not get more relevancy of the present curriculum of Higher Secondary Level mathematics in the present society of Nepal. They replied that the content of the Higher Secondary Level mathematics focuses on theoretical aspect of mathematical implication but it does not focus in the present

scenario of Nepalese society. The Nepalese society especially rural areas only need the basic mathematical knowledge. So, the mathematical theorems are not applicable in the society. Even though, they all are agreed with the view that it is applicable to the higher education and planning and policy level as well as to promote competitiveness in the present world.

It is generally agreed that problems related to characteristics background of students are due to different background such as gender, age, socio economic status, ethnic, cultural, family background etc.. The present researcher wanted to know the impact of background of the students in their teaching learning process. Most of the respondent replied that they found most of the students face difficulties in classroom due to their background. They are not motivated and interested in mathematics classroom. The respondents also reply that the students got the loose support of the family and parents; this is also the cause of low motivation to the students in mathematics classroom.

The next category of the questions tried to find out the teachers preparation in the classroom purpose. The questions about preparing daily lesson plan, annual plan and teaching method used in the classroom is asked to the teachers. In the response of these queries, respondents replies they do not prepare the lesson plan and annual plan in written form but they prepare themselves when to finish the annual course and how and what to teach in a day. For instance, “today I will finish circle exercise no 4.6”, said by the teacher. As a response about the teaching method, most of the respondents replied that they have used mixed method in classroom. This means that according to the topic, students’ interest, and classroom environment determine what method they need to be used. Most of the time, they have used interaction method along with the problem solving technique. Students and teachers centered method is another method used by the teachers in Higher Secondary Level mathematics classroom.

The next category of questions comprises the problems of teaching on the basis of curriculum. This section includes the questions related to the problems faced by the teacher in classroom due to the curriculum. The responses of the teachers are diverse according to geographical scenario. The urban teacher responses that there is an availability of reference book and other materials while in rural areas, there is the problems of references materials. The responses of the teachers in this category are presented below:

*“The curriculum has been prepared in English Language and most of the teachers and students from government schools feel difficulty to grasp the core message of the curriculum. So, language has become one of the barriers to implement the curriculum effectively.”*

*“Although curriculum has been designed as such, there is no provision of regular monitoring and supervision of the teaching learning activities by the HSEB especially in remote areas.”*

*“The necessary lab materials stated in the curriculum are not available in schools as a result teachers and students just study the theoretical portion and practical portions are left aside.”*

*“Although the curriculum has prescribed some of the text books and reference books but the books are not available as a result teachers feel difficulty to deliver the contents as the curriculum states.”*

*“Lack of fundamental demand and supply based curriculum is the major problem faced by teachers in schools due to the curriculum.”*

*“Curriculum is always prepared in a certain theory but the contents and time assigned do not match in the real context for example strikes, occasional leaves hinder to fulfill the contents on time.”*

These are the responses provided by the respondents and analysis by the help of those responses. This shows that teachers face a lot of problem in the curriculum implementation. Some problems are related to content, students' background, geographical scenario, language problems, socio economic status of the students and so on.



## **Chapter - V**

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

This chapter deals with the summary, major findings, conclusion and recommendations.

#### **SUMMARY**

The purpose of this study is to identify and analyze the problems faced by Higher Secondary Level mathematics teacher in implementing mathematics curriculum in the classroom. This means that the problems arisen in the period of implementing the curriculum in the Higher Secondary Level are analyzed in this study.

The objectives of this study are to identify the problems faced by teachers in implementing mathematics curriculum, to explore the problems, how the difficulties of the curriculum solved by the mathematics teachers while teaching, to identify the problems related to implementation of existing curriculum in the classroom higher secondary level.

For this study the problems are categorized into seven categories which have fulfilled the basic need of this research. The descriptive survey method has used to be conducted the research. The responses have collected from all the teachers and interview has taken to the selected teachers through random sampling method.

The researcher has himself developed the questionnaire under the guidance of supervisor. Consisting of forty two questions related to the problems faced by Higher Secondary Level mathematics teacher in the implementation of curriculum. The questionnaire and interview schedule are the major tools of the study. The statement of the questionnaire have been categorized into seven category and each category consist of six questions.

The collected data has been quantified based on five points Likert scale, questionnaire have be included in each category of problems and analysis of the responses have been carried out using statistical indicators such as mean weightage and percentage have been used for analysis of the problems and interview schedule have analyzed in more descriptive way.

### **Major finding**

The major findings of this study are based on responses of forty two Higher Secondary Level mathematics teachers. From the field survey and statistical analysis of collected data, it is found that teachers have been faced great problems in implementing curriculum of mathematics of Higher Secondary Level. On the basis and interpretation of data, the findings of this study are presented as below:

- Lack of teachers training about implementing of curriculum with including new concept, relations, modern techniques and teaching methods for mathematics.
- There is the problem in using appropriate teaching method and technique while implementing curriculum in classroom due to lack of well managed environment other educational equipment which affect the implementation of curriculum.
- Difficulties to complete the whole course by using students centered teaching method as allocated by curriculum so it is as problematic to implementing the curriculum.
- There is the problem on respecting the individual differences in the classroom while teaching. Thus to trying to fulfill the individual needs in teaching learning affect to improve the curriculum thoroughly.
- There are few issues to be improved to motivate students towards mathematics learning. The curriculum does not follow the strategies to students' motivation so it is as problems.

- The subject matter included in the curriculum are not well designed understanding the local needs.
- Regular monitoring and supervision is not conducted by the HSEB as stated in the curriculum. As a result, whatever the processes go ahead in schools are always considered to be systematic and teachers follow the same.
- Content of the mathematics on Higher Secondary Level does not address the social need.
- There is the lack of preparing annual lesson plan by the teachers.
- Difficulties of teaching because of different family environment of students.
- There is the difficulty in keeping anecdotal records and supervision of the students.
- Lack of opportunity to participate on interaction, workshops, and seminars related to subject matter and handle the curriculum.
- Rural schools are more deprived of getting new textbooks, materials rather than the urban. Similarly, students from urban give more priority to study than the rural students as a result the objectives of the curriculum are fulfilled more accurately in urban schools than the rural ones.

## **Conclusion**

From the study the researcher found that there are many of problems were appeared in implementation of curriculum in higher secondary level in Salyan District. Among the seven different set of items described above shows that there are numerous problems faced by teachers due to timely availability of the curriculum, lack of training, classroom environment, unavailability of reference

teaching materials, background of the students and so on for implementing the curriculum.

The researcher has found the many problems faced by teachers in rural areas of Nepal due to the numerous reasons. The major reasons are unavailability of appropriate teachers' training, students' learning base, problems related to content, problems related to making plans and activities, problems related to students' evaluation, problems related to social environment and problems related to physical facilities.

It is also found that the mutual relationship between teachers and students is also necessary to implement the Higher Secondary Level mathematical curriculum in classroom. The students' interest of learning and teachers' interest in teaching is another influential aspect to implement the curriculum implementation process in the classroom.

### **Recommendation**

Recommendation has been made to solve the problems faced by the mathematics teachers to implement the curriculum. The recommendations by the present researcher are presented below:

- The teachers' training should be conducted time and again to improve the educational system on the basis of curriculum implementation.
- To fulfill implementing of the curriculum time and again the supervision, taking the examination and making work plan by the teachers is necessary to improve the educational system
- The teachers' should be active, energetic, qualified and interested to implementing the curriculum.
- Timely modern and refreshment training, orientation, and supervision should be provided to the teacher.

- The curriculum should address the individual interest, need, social needs as well as national and international goals.
- The curriculum should address the wider application and historical background of each unit.
- There should be established a well-equipped laboratory, library research materials access of students and teachers should get supports to on the basis of curriculum.
- Use of lesson plan should be encouraged.
- The students anecdotal record should be managed properly and time based examination system should be encouraged that support to implementing the curriculum.
- The educational policy and formulation of curriculum of mathematics Nepal should be revisited and revised.

### **Recommendations for further study**

The researcher has been found the following recommendations for the further study:

- Similar study should be conducted in other level and coverage the wider area and different regions.
- The research should be done by focusing on the practical aspect of mathematics application in the present scenario with references to the students, teachers and parents.
- It is well necessary to conduct the research from national level to find the problems faced by teachers to implement the curriculum.

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## Appendix A

### The Questionnaire for the Data Collection

**Name of the teacher:**

**Qualification:**

**Name of the School:**

**Rural/ Urban**

**Experience:**

**Period per week:**

Dear Respondent,

I am going to conduct a research entitled "**Problem Faced by Higher secondary Mathematics Teachers in Curriculum Implementation.**" For the completion of my study (M.Ed.), I need your support. So, I hope you will provide your valuable time to me and help by fulfilling this questionnaire. These questions do not have exact answer but questions seek your opinion. There are five options and which one is better you think please tick (√) under it. For instance, if you are agree then tick under the same column where S.A. (Strongly Agree), A. (Agree), U. (Undecided), D. (Disagree) and S.D. (Strongly Disagree). The existing curriculum of higher secondary mathematics based on. These view are not misused and secrecy is preserved.

	Statement	S.A.	A.	U.	D.	S.D.
<b>Training Base</b>	1. Using Appropriate Teaching Methods and Techniques					
	2. Creating Learning Centers					
	3. Directing Students to Think with Open Ended Questions					
	4. Using Knowledge and Information Technologies					



	5. Encouraging Students' Active Involvement					
	6. Being Flexible During Implementation					
<b>Learning Base</b>	7. Respecting Individual Differences					
	8. Awakening Students' Curiosity					
	9. Learning center process planning					
	10. Doing Activities to Foster Students' Social Emotional Intelligence					
	11. Fostering Students' Creative Thinking Skills					
	12. Encouraging Students to Involve in Activities Based on Cooperation					
<b>Content</b>	13. Relevancy of the content					
	14. Usefulness of daily life					
	15. Teaching hour for all content is enough					
	16. Presentation of the subject matter					
	17. Theoretical aspect of the content is suitable					
	18. Teaching hour for each chapter is enough					
<b>and Act</b>	19. Preparing Annual Plan					

	20. Preparing Language Activities					
	21. Preparing Art Activities					
	22. Designing Reading And Writing Practices					
	23. Developing Materials for Activities					
	24. Preparing Daily Plan					
<b>Evaluation</b>	25. Preparing Portfolios Evaluating Plans					
	26. Keeping Anecdotal Records and Supervision					
	27. Evaluating Students					
	28. Keeping Observation Records					
	29. Qualification of Teacher					
	30. Background of the student					
<b>Social Environment</b>	31. Making Cooperation With Colleagues					
	32. Lack of Assistant Teacher					
	33. Inadequacy In Classroom Materials					
	34. Lack of Helping Friends					
	35. Making Cooperation With School Administration					
	36. Develop skills on formulating problems for real world situation.					

<b>Physical Facilities and achievement</b>	37. Lack of Relax Time					
	38. Small Classroom Environment					
	39. Crowded Classroom					
	40. Fulfillment of the goal of mathematical curriculum					
	41. Selecting Goals and Objectives From All Developmental Areas					
	42. Based on local needs					

THANK YOU FOR YOUR COOPERATION!

## **Appendix B**

### **Interview**

#### **1. Qualification and Training**

- a. Have you already been completed the required qualification to teach in higher secondary education?
  
- b. Are you trained or untrained teacher?
  
- c. Have you participated any training related to mathematics teaching?

#### **2. Content**

- a. Do you find the relevancy of the content?
  
- b. Can the content be applicable in the daily life?
  
- c. Do you find theoretical aspect of the content is suitable in present society?

#### **3. Students' background**

- a. How much interested and motivated students have you found in mathematics class?
  
- b. Is mathematics interesting for majority of students?

- c. Does there is sufficient support to students from their guardian to learn mathematics?

#### **4. Time Schedule**

- a. Do you prepare the annual plans prescribed in curriculum?
  
- b. Have you prepared the daily lesson plan before teaching?
  
- c. What kinds of teaching method do you apply in classroom?

#### **5. Problems of Teaching on the basis of curriculum**

- a. How frequently do you face problems in teaching due to the curriculum?
  
- b. In your opinion, what are the causes of problems in teaching mathematics?  
What can be the solution of these problems?
  
- c. In which area your higher secondary school lives? Does it effect to implementation of the curriculum?

#### **6. Availability and use of curricular materials other than the text**

- a. Are teachers' guide and other supporting materials available in your schools? What extent are they useful in teaching mathematics?
  
- b. Do you follow the prescribed book and references books? If not, why?
  
- c. Have you follow curriculum of mathematics thoroughly? If not, why?

## **Unstructured Interview with the Respondents**

Questions.

- 1.** What have you found the strong aspects of higher secondary level mathematics curriculum in course of teaching?
- 2.** Have you experienced any weaknesses of higher secondary level mathematics curriculum in course of teaching? If yes, please mention any.
- 3.** What types of problems are you facing while implementing the higher secondary level curriculum?
- 4.** What should be done to achieve the aims of this curriculum successfully?
- 5.** In comparison to rural and urban schools, which types of schools are more successful to implement the curriculum and why?

## Appendix C

### Simple percentage of within questionnaire

	S. N.	S.A.	A.	U.	D.	S.D.
<b>Training Base</b>	1	5 (11.9)	34(80.95)	2(4.76)	0	1(2.38)
	2	3(7.14)	36(85.71)	2(4.76)	1(2.38)	0
	3	4(9.52)	7(16.67)	30(71.43)	1(2.38)	0
	4	6(14.29)	30(71.43)	4(9.52)	1(2.38)	1(2.38)
	5	1(2.38)	3(7.14)	6(14.29)	30(71.43)	2(4.76)
	6	0	1(2.38)	13(30.95)	22(52.38)	6(14.29)
<b>Learning Base</b>	7	2(4.76)	14(33.33)	16(38.1)	10(23.81)	0
	8	5(11.9)	26 (61.9)	10 (23.81)	1(2.38)	0
	9	3(7.14)	15(35.71)	22(52.38)	2(4.76)	0
	10	2(4.76)	20 (47.67)	19(45.24)	1(2.38)	0
	11	3(7.14)	7(16.67)	6(14.29)	26(61.9)	0
	12	2(4.76)	3(7.14)	2(4.76)	32(76.19)	3(7.14)
<b>Content</b>	13	3(7.14)	1(2.38)	13(30.95)	25(59.52)	0
	14	3(7.14)	25(59.52)	13(30.95)	1(2.38)	0
	15	0	1(2.38)	5(11.9)	23(54.76)	14(39.33)
	16	5(11.9)	34(88.95)	2(4.76)	0	0

	17	4(9.52)	30(71.43)	5(11.9)	3(7.14)	0
	18	1(2.38)	5(11.9)	1(2.38)	29(69.05)	6(14.29)
<b>Plans and Activities</b>	19	6(14.29)	20(47.62)	10(23.81)	5(9.52)	1(2.38)
	20	1(2.38)	22(52.38)	15(35.71)	4(9.52)	0
	21	1(2.38)	17(40.48)	20(47.62)	2(4.76)	2(4.76)
	22	1(2.38)	9(21.43)	28(66.67)	4(9.52)	0
	23	1(2.38)	8(19.05)	11(26.19)	20(47.62)	2(4.76)
	24	7(16.67)	7(16.67)	7(16.67)	17(40.48)	4(9.52)
<b>Evaluation</b>	25	2(4.76)	14(33.33)	25(59.52)	1(2.38)	0
	26	2(4.76)	35(83.33)	5(11.9)	0	0
	27	2(4.76)	8(19.05)	4(9.52)	7(16.67)	21(50)
	28	2(4.76)	27(64.29)	14(33.33)	1(2.38)	0
	29	2(4.76)	6(14.29)	6(14.29)	12(28.57)	16(38.16)
	30	2(4.76)	38(90.48)	1(2.38)	0	1(2.38)
<b>Social Environment</b>	31	1(2.38)	1(2.38)	4(9.52)	13(30.95)	23(54.76)
	32	0	15(35.71)	14(33.33)	12(28.57)	1(2.38)
	33	0	12(28.57)	28(66.67)	1(2.38)	1(2.38)
	34	1(2.38)	10(23.81)	7(16.67)	24(57.14)	0
	35	1(2.38)	5(11.9)	19(45.24)	17(40.48)	0



	36	2(4.76)	38(90.48)	1(2.38)	0	1(2.38)
<b>Physical Facilities and achievement</b>	37	1(2.38)	3(7.14)	32(76.19)	5(11.9)	1(2.38)
	38	2(4.76)	9(21.43)	20(47.62)	10(23.81)	1(2.38)
	39	3(7.14)	10(23.81)	16(38.1)	10(23.81)	4(9.52)
	40	0	32(76.19)	6(14.29)	3(7.14)	1(2.38)
	41	0	34(80.95)	3(7.14)	2(4.76)	3(7.14)
	42	2(4.76)	35(83.33)	5(11.9)	0	0

## Appendix D

### Sample Teacher's Profile

S. N.	Name of Teachers	Name of Institution	Qualification
1	Gam Bdr. Rana	Janta HSS, Kavra	M. Ed.
2	Romharsha Khadka	Janta HSS, Kavra	M. Sc.
3	Bindur KC	Sarada Jankalyan HSS, Rampur	M. Ed. Running
4	Yagyalal Sharma	Sarada Jankalyan HSS, Rampur	M. B. S.
5	Sittisap Bista	Nepal Rastriya HSS, Kapurkot	M. Ed.
6	Anup Sharma	Nepal Rastriya HSS, Kapurkot	M. B. S.
7	Dilli Kumar Dangi	Nepal Rastriya HSS, Kapurkot	M. A.
8	Bharat Kumar Oli	Bhanubhakta HSS., Damachaur	M. Ed.
9	Deepak Oli	Bhanubhakta HSS., Damachaur	M. A.
10	Bibek Kumar Chand	Balkanya HSS., Kotbara	M. B. S.
11	Prem Bhandari	Balkanya HSS., Kotbara	M. A.

12	Chakrapani Gautam	Balkanya HSS., Kotbara	M. Ed.
13	Salik ram Basnet	Saraswoti HSS., Pedikhola	M. Sc.
14	Ram Roshani Basnet	Saraswoti HSS., Pedikhola	M. Ed.
15	Gaurilal Oli	Saraswoti HSS., Pedikhola	M. Ed.
16	Komal raj Oli	Suryodaya HSS., Gothiban	M. A.
17	Ghanshyam Bhattarai	Suryodaya HSS., Gothiban	M. Sc.
18	Lal Bdr. Roka	Janjyoti HSS., Bhalchaur	M. A.
19	Jhalak Pun	Janjyoti HSS., Bhalchaur	M. Ed.
20	Nanda Kishor Yadav	Janjyoti HSS., Bhalchaur	M. A.
21	Nokh Bdr, Goshain	Janta HSS., Raghechaur	M. Ed.
22	Sher nath Yogi	Janta HSS., Raghechaur	M. Sc.
23	Gorakh Budhathoki	Janta HSS., Raghechaur	M. B. S.
24	Bal Bdr. B. C	Tribhuvan Janta HSS., Chyura	M. B. S.
25	Basanta Kumar Sharma	Tribhuvan Janta HSS., Chyura	M. Ed.
26	Bamdev Gautam	Tribhuvan Janta HSS., Chyura	M. A.
27	Narayan Bdr. Thapa	Budhdha Janakalyan HSS., Badagaun	M. Ed.

28	Mahesh Neupane	Tribhuvan Janta HSS., Luhaping	M. Ed.
29	Sanjeev Basnet	Tribhuvan Janta HSS., Luhaping	M. B. S.
30	Madhav G.C.	Tribhuvan Janta HSS., Luhaping	M. Sc.
31	Madhusudan Sharma	Tribhuvan Janta HSS., Luhaping	M. A.
32	Usha Shreshtha	Shivjan HSS., Shitalpaati	M. Ed.
33	Dron Acharya	Shivjan HSS., Shitalpaati	M. B. S.
34	Jung Bdr. Bist	Shivjan HSS., Shitalpaati	M. A.
35	Tufan Singh Thapa	Shivjan HSS., Shitalpaati	M. A.
36	Jit Bdr. Bhandari	Sarada HSS., Shankhamul	M. Ed. In EPM
37	Rajendra Bohara	Sarada HSS., Shankhamul	M. A.
38	Mohan D. C.	Sarada HSS., Shankhamul	M. Sc.
39	Dilli Basnet	Jankalyan HSS., Tharmare	M. Ed.
40	Indira Pandey	Jankalyan HSS., Tharmare	M. Ed.
41	Bhyuraj K. C.	Jankalyan HSS., Tharmare	M. A.
42	Chudamani K. C.	Jankalyan HSS., Tharmare	M. Sc.

## Appendix E

### Sample Teachers for Interview

S. N.	Name of teacher	Name of the Institution	U/R	Experience
1	Usha Shreshtha	Shivjan HSS., Shitalpaati	U	2 years
2	Mahesh Neupane	Tribhuvan Janta HSS., Luhaping	U	12 years
3	Sittisap Bist	Nepal Rastriya HSS., Kapurkot	R	20 years
4	Dilli Basnet	Jan Kalyan HSS., Tharmare	U	6 years
5	Bharat Kumar Oli	Bhanubhakta HSS., Damachaur	R	6 years
6	Komal Raj Oli	Suryodaya HSS., Gothiban	R	3 years
7	Bindur K. C.	Sarada Janakalyan HSS., Rampur	R	5 years
8	Jit Bdr. Bhandari	Sarada HSS., Shankhamul	U	18 years

U= Urban

R= Rural