

Chapter-I

INTRODUCTION

Background of the Study

Teaching is a challenging and very complex process and so is learning. Education is far more complex process because it involves both teaching and learning. But the complexity of the problems of teaching has been urgently felt only after the expansion of education facilities. Today, education has been regarded as one of the birth rights of people and the programmes of formal education have been expanded all over the world. This has resulted in the establishment of vast organization of educational institutes where millions of students are taught by thousand of teacher' every day. It is at this point where the efficiency of education system has been regarded as necessity and programmes of teacher training and organized and expanded on the assumption that efficient teacher is a prerequisite for efficient operation of education system.

About the various aspects of teaching Burtan 1976 said, "Teaching is the stimulation, guidance direction and encouragement of learning."Teaching is the communication between two or more person who influences each other by their ideas and learns something in the process of interaction. Teaching is to fill the mind of learner by information and knowledge of facts for future use. Teaching is to cause motivation to learn.

Bhatia and Bhatia (1986) said; "Teaching is establishing a harmonious relationship between teacher, pupil and subject; it gives useful information. It is causing the child learn. It is the simulation and direction of learning. It helps the child to make effective adjustments it is guiding the pupil's activity and it is the training of his emotional."

Teaching can be conducted effectively and meaningfully if the proper teaching approach is selected and appropriate teaching materials are used. The teacher while teaching their new topic in mathematics always faces for fundamental problems of teaching. How to teach for understanding of new concept? How to teach for assimilation learning? How to teach for permanency of learning? (Pandit R.P, 2061)

These four accepts or phase of the total problem of learning mathematics and supplemented rather than identical. Each of these fundamental aspects of learning implies in quality fundamental instructional problem for the teacher. In order to overcome these problems, the teacher should be tactful, helpful, and laborious qualified for the selection of appropriate teaching style and instructional materials. The teacher should consider the following aspects while determining the teaching approach. How to motivate students in mathematics and medium of instruction in mathematics? How to use appropriate methods and medium of instruction in mathematics? How to plan instruction?

These are the aspects of effective teaching. The teacher who want to teach in the classroom and also every mathematics teacher should make the instructions plan for teaching learning work. A mathematics teacher has to make instructional plans; mainly it contains annual work plan, unit plan, and daily lesson plan. A school has run and conducted annual work plan for effective and successful teaching learning and other extra curriculum program.

For the improvement of education many committee, commissions were established and all of those has emphasized son teacher training so that teacher will teach the students with pre plan making instructional plan such that effective teaching will be there. But in Nepal most of the teacher also the mathematics secondary level teacher trained but they are not using instructional plan in teaching mathematics.

In researcher experience, our school teacher to not use any instructional plan while teaching and even new many teachers who are trained but not using instructional plan so the many students believe that mathematics is boring and strong effort is needed to learn it, but still find it important for life. This is a paradox. The reason for seeing mathematics as importance can be practical need for the better profession and to some degree for better life.

Also the teacher use to say that to student's mathematics is difficult as well as boring so students provide more time and they should take tuition. But many of the teachers teach in the classroom without using instructional plan. It's not only teacher's fault and it has been established as tradition.

At this situation in one hand mathematics has been key of our life and in other hand students feel boring and difficult subject for mathematics. To solve this problem teaching mathematics using instructional plan may be also the one of the solution. It means if teacher teaches in the classroom using instructional plan what will be the effect. If he use instructional plan and what is opinion, what may be the causes not using instructional plan to investigate those questions the present research "effectiveness of instructional plan in teaching mathematics at secondary level" is taken as the research topic of my master degree thesis.

Generally, the work of teaching learning starts from the plan. In instructional plan pre-prepare about what to teach, why to teach, when to teach, who to teach before the teaching of subject matter to fulfill of the determined curriculum to students through teaching activities.

In general term, instructional planning is preparation for teaching and learning including construction of goals, Objectives, instructional assessments and methodology. It is systematic planning developing, evaluating and managing the

instructional process based on principles of learning and instruction in another word we can say that instructional plan are the overall plan for the teacher for the effective teaching.

Instructional plan or plan of teaching contains that plan like instruction objectives, teaching learning activities, materials, process of evaluation. Even a plan is said that starting of teaching learning but it is a continuous process of instruction plan for teaching learning activities and its result of evaluation. So, it provides the base to plan for edit and environment.

Instruction planning is an essential skill for teaching mathematics to students with learning disabilities and other struggling learners. The author's frame of reference is based in their experience in developing and testing mathematics lesson for the blending assessment with instruction program (BAID) over a five year programme. (Meyen, Edward; reer, Diana, 2009) state that in his article "The role of instructional planning in math instruction for students with disabilities."

Teacher confidently import lesson with carefully crafted instructional plans. Teachers have the challenging task of conveying information to a room full of students with varying learning styles. The teacher is typically assigned a curriculum guide containing the set of information plans to outlines the method for teaching each lesson with activities and a list of necessary resource. (Jorna Springs, Ehew Contributor) state that on her article, "What is an instructional plan for class room teachers?"

From above discussion we can say that instructional plan is essential and most important tool for the teacher which helps the researcher allocate instructional time, select appropriate activities, think individual lesson to the overall unit or curriculum

sequences activities to be presented to students, set the place of instruction select the homework to be assigned and identify technique to assess students learning.

Instructional plan helps teacher in five basic ways. By helping they feel comfortable about instruction and giving them sense of understanding and ownership over the teaching they plan. By establishing a sense of purpose and subject matter focus. By affording the chance to review and become familiar with the subject before actually beginning to teach it. By ensuring that there are ways in place to get instruction started activities to purpose and a framework to follow during the actual deliver of instruction. By linking daily lesson to broader integrative goals units or curriculum topics.

There are three types of instructional plans which are described below.

Yearly Work Plan

A plan prepared by the subject teacher in any subject for a year in which clear figure of instruction is provided called yearly plan. Generally in yearly plan what to teach, when to teach, how to teach, why to teach, which method is appropriate, which material should be used all those accepts are submitted in this plan. A yearly plan is a key of instruction which is prepared by the subject teacher according to the year plan is also pre-plan of the teacher for the teaching or this is the important tool for instruction.

Unit Plan

A plan prepared by any teacher in any unit of any subject is called unit plan. In another word unit plan is a pre-plan of the teacher in any unit to teach for the students. In unit plan specific objectives, period, teaching materials, evaluation process are included. The unit plan is prepared by the teacher and it must be prepared for every

topics. This plan helps the teacher to achieve the goals or objectives of the curriculum by teaching in the classroom with long term learning.

Lesson Plan

A lesson plan is simply a detailed plan prepared in advance for the teaching of daily lesson. No business can be success without definite plan of operation and expansion likewise no teacher can teach effectively in the classroom without lesson plan. Lesson plan is a teacher's detailed description of the course of instruction for an individual lesson. A daily lesson plan is developed by a teacher to guide class instruction. The detail of the plan will vary depending on the performance of the teacher; lesson plan is the most important plan for the teacher which guides the teacher in what, why, how to teach the students and it has 5 components.

Statement of the Problem

It is believed that mathematics is a difficult subject so that most of the students failed in mathematics even today. In the same way they have low achievement in mathematics and they are also unable to understand mathematics adequately. There are many factors which are affecting teaching and learning in mathematics among them use of instructional plan is one of the most infusing factors in teaching and learning mathematics. It is blamed that instructional plan is not adopted by teacher in school for mathematics consequently the mathematics learning is not effective in our school. For the effective mathematics learning the teacher should use instructional plan which play vital role for effective teaching and learning of mathematics.

In the context of Nepal most of students have failed in mathematics at school level. May be due to the lack of using instructional planning. To reduce the level of achievement use of instructional planning for mathematics teaching and learning so

the researcher is going to find out the situation of using instructional plan in classroom. This study is mainly focused on investigating the researchable questions:

-) How is the opinion of teacher about instructional plan and using instructional plan in teaching mathematics?
-) Is there appropriate situation to use instructional plan in school?
-) What are the causes not using instructional plans in teaching mathematics ?

Objectives of the Study

Every function or every task must have their objectives. Without objectives the function or the task can't be the meaningful. So the objectives of this research work were as follows: -

-) To explain the opinion of secondary level math teacher's about instructional plan and use of it.
-) To examine the situation of school about using instructional plan in teaching mathematics as secondary level.
-) To explain the cause of not using instructional plan in teaching mathematics.

Significance of the Study

Mathematics is one of the most important and essential subject in school curriculum so this subject is compulsory and optional at secondary level. Teaching mathematics is a difficult and challenging because of its nature and learning difficulties so the rate of failure in mathematic is very high and there is low achievement of the students in mathematics. The instructional plan is one of the most important factors that play vital role in effective teaching. If we can do effective teaching then the rate of failure in mathematics will be very low. This study was concerned the situation analysis of using instructional plan in teaching mathematics at secondary level. The significance of this study were listed below:

-) This study is helpful to get information about the important role of instructional plan.
-) This study provides information about the teacher's opinion towards the instructional plan and use of it.
-) It also helps to the teacher, parents and other common people to create better environment and awareness to provides positive opinion towards use of instructional plan.
-) It provides the main cause of not using instruction plan while teaching.
-) It is helpful to explain the situation of using instructional plan is school.
-) It provides the advices to the teacher about the use of instructional plan.

Delimitation of the Study

The delimitation of the study were listed as follows:

- i. The study was limited to Rupandehi district of Nepal
- ii. The study was limited to mathematics teachers teaching at secondary level.
- iii. The study was limited to both public and private secondary school altogether urban and rural area.
- iv. The study was conducted to the students of grade ten.

Operational Definitions of the Key Terms

Situation

A set of circumstances in which one finds oneself is called situation or actual position of any place, thing or person is called situation.

Analysis

A detail examination of something in order to interpreter or explain it.

Situation analysis

The detail description or description of the actual condition of school environment of using instructional plan.

Instructional Plan

Instructional plan is preparation for the teacher or preplan for the teacher including construction of goals, objectives, instructional assessments and methodology. Instructional is primarily considered with lesson plan, unit plan annual plan, those plans which provides the guidelines for the teacher to teach the math's and the instructional plan is the key of high achievement.

Secondary Level

The school runs from IX and X which is recommended by NEC-1992.

Urban School

The schools which are situated or established in the area of Tilottama Municipality of Rupendehi district.

Rural School.

The school which are situated out of the Gangoliya VDC of Rupendehi district.

Public school

It refers to the schools control and financed by government of Nepal.

Private School

The school which is established from private ownership and managing for all physical and economical factor depends own self.

Teacher's Performance

The teaching skills, which have the most technical impact on student learning.

The performance shows in classroom teaching like: initiation of lesson, development of the lesson, closing of the lesson, using reinforcement material etc.

Opinion

The believe and thought or idea about any things of an individual.

Appropriate Situation

The environment where every factors (that effects in using of instructional plan) are good or the suitable condition for using instructional plan.

Chapter-II

REVIEW OF RELATED LITERATURE

This chapter deals with the review of related literature of this study and conceptual framework for this study. The main purpose to review of related literature is to find out what work have been done and what work has not been done in the area of study being under taken. Also, the purpose to review of related literature is to facilities the researcher has to research in any topics.

Empirical Literature

During the past decade a lot of researcher study and research belief and attitude of teacher using lesson plan and effectiveness of lesson plan but there is no research related to instructional plan so I have chosen the topic "Situation analysis of using Instructional Plan on Secondary Level" at this time. I have also study some related literature and the related of this study is mentioned below as follows:

Subedi, (2001) "Training needs assessments of secondary school mathematics teacher." Concluded that the training needs for the in service mathematics teacher of secondary school to develop the following completeness. Instructional Material: to prepare plan and use instruction material of mathematics. Techniques of Teaching: to sue student centered to identify the motivational technique to questions, skillful and to identify the method of rapport building and warning on activities.

Sharma (2004) in his study entitled "A study on effectiveness of mathematics teacher guide in secondary level" concluded that teacher's helps the teacher for planning the lesson plan and makes students creative. It helps new and untrained teacher to run the class effectively. He founded that public school teacher's opinion is better than that of private school teacher towards effectiveness of teacher's guide in secondary level.

Tiwari, (2005) in his study entitled "Teachers belief on teaching learning process in mathematics at secondary school" has selected the following objectives. To find the belief of mathematics teacher about the learning process and their classroom practices.

In this research, he concluded that there is no moderate degree of positive correlation between secondary level mathematics teacher's belief towards teaching learning process and their classroom practice the findings of this study implied that teacher's belief was positive towards mathematics classroom practices. "Participating Mathematics teacher training" conducted CERID (1993) searched various method of teaching mathematics in secondary school of Kathmandu valley. The report pointed lecture, question-answer and demonstration methods are frequently used. The study also found that the teacher heavily depended on the lecture method and problem solving methods. Other approaches were minimally used. The teachers and researchers considered are suggesting using different method of teaching (Shrestha, B.K. 2005).

Shrestha (1982) conducted a research entitled "The teacher behaviour of trained teacher of Nepal" An evaluation study institute of education T.U.

The quality of teaching in secondary schools also does not seem to have improved with availability of tired teachers. A study conducted by Shrestha and Malla indicated that availability of trained teachers in the secondary school of Nepal have not improved the quality of teaching so they conducted. The presence of trained teachers has not improved the instructional standard of the school. The presence of well-qualified teachers in the reputed secondary school of Kathmandu valley has not helped to maintain their standing in the national average.

Himal (2005) "A study on the effectiveness of teacher training programme in mathematics at primary level" concluded that teacher training programme hasn't effective because of the result of the study in slightly difference the effectiveness of trained and untrained teachers. The most of even trained teacher like to teach without preparing instructional plan. So he recommended that the trained teacher should use properly their training capability in classroom instruction.

Chaudhary (2010) "A study on effectiveness of lesson plans in teaching mathematics at secondary level." In his research, the objectives of research are as follows. To find the effectiveness of lesson plan in teaching mathematics at urban public secondary school. To find the effectiveness of lesson plan in teaching mathematics at public secondary school. To compare the effectiveness of lesson plan in teaching mathematics in secondary level. To test the effectiveness of using lesson plan in teaching mathematics at grade X. To find at the achievement score between experimental and control group. Lastly, He recommended that every mathematics teacher should always use daily lesson plan while teaching mathematics.

Ghimire (2011) "Mathematics teacher's belief and attitude towards the use of lesson plan in secondary level." In this research the objective was as follows: to investigate the belief and attitude of mathematics teacher's towards the use of lesson plan in public and private school, to compare the belief and attitude of mathematics teacher towards the use of lesson plan in public school, To compare the belief and attitude of mathematics teacher towards the use of lesson plan in private school, and to find the cause of not using lesson plan in classroom teaching.

He used qualitative, survey type descriptive research design to find the belief and attitude of mathematics teachers towards the use of lesson plan and they took 25 secondary school and find that teacher's positive opinion towards the use of lesson

plan and lastly he recommended that every mathematics teacher should prepare the lesson plan.

Jorna Spring, Ehw Cullibuilor "What is instructional plan for classroom teacher" has stated that teachers have the challenging task of conveying information to a room full of students with varying learning styles. The teacher is typically assigned a curriculum guide containing the set of information the class is expected to learn. Teacher create instructional plan to outline the method for teaching each lesson with activities and a list of the necessary resource and focused on the following points.

Lesson objective

Target the essential focus of the lesson you plan to teach. You may have a lesson that illustrates the wisdom of the American colonists by preparing for invasion with the minute-men on standby. The lesson may be on helpful tricks for multiplying by nine. Identifying the lesson objective provides a reference to check all instructional Plan elements again to determine if they will aid the students in learning the lesson. Gear activities to the objectives.

Learning style

Incorporate instructional plan activities and props that accommodate all the learning styles of your students. Bring dress-up clothes and toy musket for teaching colonial history to hands-on learners. Read the text of the lesson as a guide for acting out the story events. Bring posters outlining the steps to multiplications tricks for visual learning aid. Use power point presentation and brief whiteboard illustration and lecturing to draw in students with visual and auditory learning styles.

Resource

Gather resources from school and the community to create instructional plans. Check the school and municipal libraries for books, audio presentations and films on

your lesson subject. Check the municipal library calendar for presentation you want your students to attend. Use historical landmark and learning centers like the museum of science and nature or the site of a historical battle as instructional plan elements. Many communities preserve the homes and business of prominent settlers for historical value.

Asses learning

Traditional testing does not accommodate the social background of all students. Incorporate instructional plan assignments that require student to display their understanding of the lesson objective. Ask groups of students to create a newspaper story, radio news dialogue or a documentary for television with actors in costume. Have each group present their creation to the class for critique of the content. Take note of the information presented and knowledge behind critical remarks.

Meyan, Edward, Greer, Diana (2009) "The role of instructional planning in math instruction for students with learning disabilities." The article focused on the importance of instructional planning in teaching mathematics to students with learning disabilities. It offers information about the mathematics performance of students in the U.S and the lesson plan format Blending Assessment with Instruction Program (BAIP). It present the stages involving in the overall EDL development process model in which BAIP lesson were designed, developed produced and tested. Further, lit also discusses the five frame works which are employed in the BAIP lesson model namely contexture, teaching, lesson, application and Extension a list of the insights gained on the BAIP lesson writing listening process is also provided in this article the author has focused the following points. Focusing on instruction, Maximizing instructional time, expecting students to achieve, Planning and preparing

for instruction and Teacher of high ability students planning and organizing for instruction.

The author's has also stated that effective teacher of gifted students do the following match task complexities and individual skill in the planning process. Leading to grater student motivation and engagement (csikszeratimihaly et al 1993), Exhibit competency in the selection and use of materials (Hansen and Feldhusen, 1994, Nelson, Princkle 1992, Story, 1985), particularly the ability to select appropriate high level materials (Share and Delcourt 1996) and choose appropriate recourse to use with students who are both gifted and diverse (Ford and Troman 2001). Facilitate access to needed resource, including providing access to advanced classes materials, collaborating with other teachers and content area expert and mentors (Share and Delewrt, 1996, Westhery and Archamhanet, 1997). Use time well in classroom (Health, 1997; Silverman 1995). Have high expectations of performance and expect their students to reach or exceed those expectations (Bloom, 1985).

The instructional process comprises three basic steps. The first is planning instruction, which includes identifying specific expectations or outcomes, and organizing learning experiences into a coherent, reinforcing sequence. The second step involves delivering the planned instruction to students that is, teaching them. The third step involves assessing how well students learn or achieve the expectations or outcomes. Notice that to carry out the instructional process the three steps should be aligned with one another. That is the planned instruction should be logically related to the actual instruction and the assessments should relate to the plans and instruction.

Theoretical Literature

Different types of theories are practiced in the field of teaching learning which helps us to understand the learning process. They are needed for the interaction of the

findings of the study. There are many theories which are about leaning and child development i.e. behaviourist, instructional design model, mentalist, humanist, and social constructivism. Among them, instructional design model is possibly related to the instructional plan.

Instructional Design in Education in New Model

Instruction is a plan of teaching & learning activities in which learning is organized. This instructional plan motivates students to learn. The aim of instruction is to make the learning process take place. According to Gustafson (1996), instructional design is:

1. analyzing what is to be taught/learned;
2. determining how it is to be taught/learned;
3. conducting tryout and revision; and
4. assessing whether learners do learn.

Instruction is a systematic process in which every component (i.e. teachers, students, materials, and learning environment) is crucial to successfully learning (Dick & Carey, 1996). Instruction deals with teaching and learning activities. These activities should assist students to learn knowledge and move this knowledge from short term memory to long term memory. To do that, students need to learn how to rehearse, encode, process and feedback new knowledge to be able to remember when they need. These factors are closely related to each other and affect each other to a certain extent. These factors should be organized in the instructional design steps. For example, if the goals and objectives are not chosen, specified or written properly, then the next and other steps will contain some problems because of the inappropriate and incomplete items in the previous step. In the instructional design, the steps are all interrelated with each other. It is very important to order the steps in a way that will

be logical and in relation with other steps. In other words, instructional design is a big responsibility to design teaching and learning activities. All steps should be thought and chosen carefully and should be ordered in a meaningful way. Every detail can play an important role during the implementation. Every decision should be given due to a reason, not just for the sake of doing so. The designer should be fully aware of the relationship among the steps. During the teaching and learning process, the designer should collect reliable data about the students, their backgrounds and their prerequisite learning. Due to the reason that they play an important role on the outcomes of instruction, they should seriously taken into consideration and help designer to create a model that will help them to keep a balance between them. An instructional design model gives method and implication to design instruction. During the instructional design process, I.D. models help educators to visualize the problem. If the instructional design model solves the learning-teaching problems, it means that it is an effective instruction. Effective instruction is instruction that enables students to acquire specified skills, knowledge, and attitudes (Reiser& Dick, 1996).

During the effective instruction, students can be motivated well. To motivate students in the instruction process, all factors must be determined well. During determination process, there are four important principles that play key role. These principles are listed below:

1. Begin the planning process by clearly identifying the general goals and specific objectives students will be expected to attain;
2. Plan instructional activities that are intended to help students attain those objectives;
3. Develop assessment instruments that measure attainment of those objectives;

4. Revise instruction in light of student performance on each objective and student attitudes towards instructional activities (Reiser& Dick, 1996).

Teachers should follow these principles in order to apply successfully their instruction. The major goal of instructional design is to demonstrate planning, developing, evaluating, and managing the instructional process. At the end of this process, it can be seen the student learning performance in instructional activities based upon defined goals and objectives. Instructional design pays attention to instruction from the learner perspective than from the content perspective which is traditional approach. According to Kemp, Morrison and Ross (1994), it involves many factors that influence learning outcomes, including such questions as these:

1. What level of readiness do individual students have for accomplishing the objectives?
2. How is achievement of objectives determined?
3. What revisions are necessary if a tryout of the program does not match expectations?

These questions concerns with student learning because the major goal of instructional design is to accomplish the identified goals and objectives in the instructional activities. In the instructional design process, there are four key elements. These are: 1. whom to teach, 2. what to teach, 3. how to teach, and 4. how to evaluate. In whom to teach process, knowing student personality is important because the target learners are students. Without students, instructional activities can't be implemented. To design effective instruction, teachers should get information about student characteristics. In what to teach, instructional goals and objectives are important. Teachers first must make decision on their goals and objectives in instructional design. Instructional goals and objectives give teacher information on

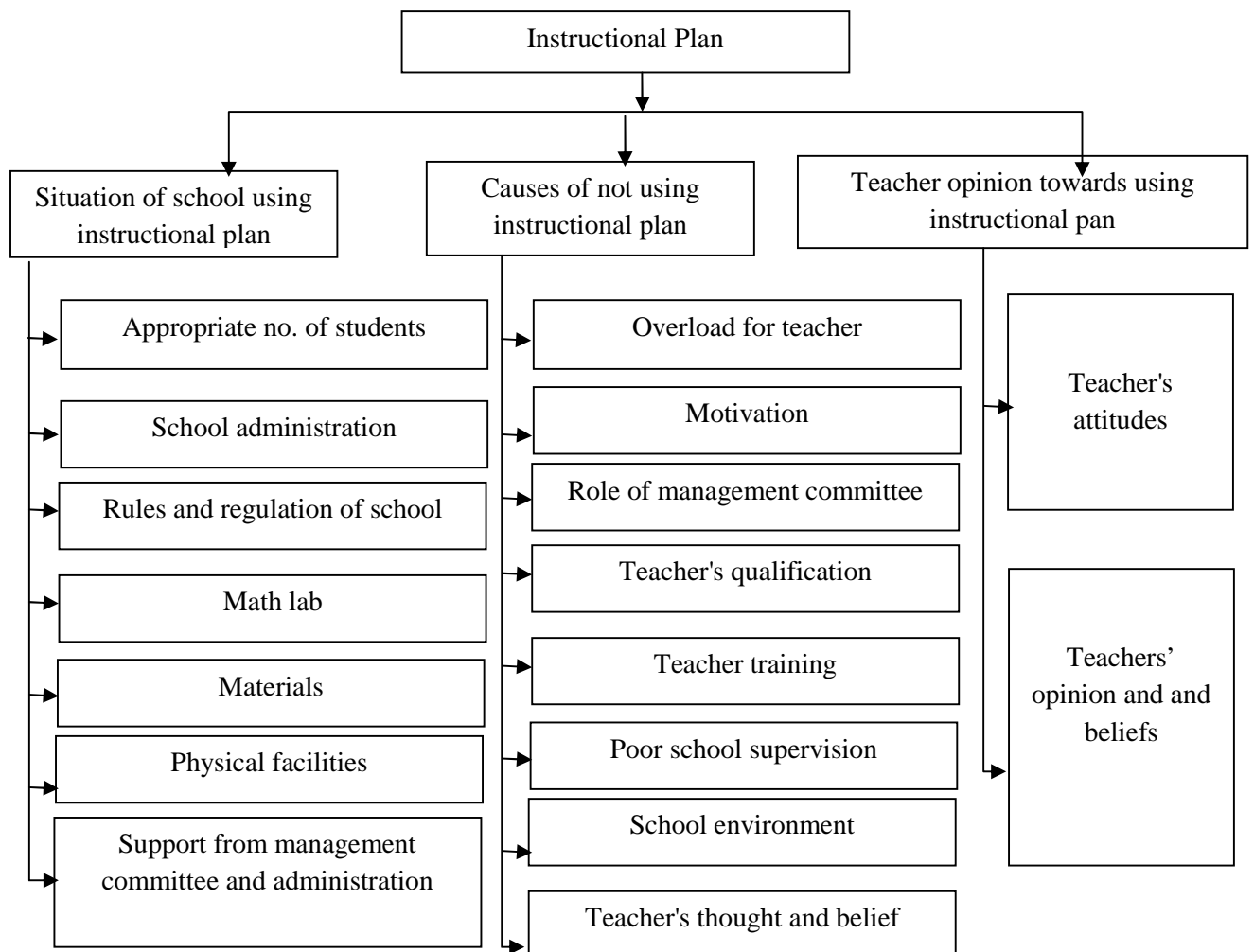
what to teach during instructional activities. In how to teach, teacher gets information on how to deliver goals and objectives to students in the instruction. Instructional delivery methods indicate teacher what kinds of teaching and learning methods will be used. In how to evaluate, assessment tools are playing key role because teacher can get information on whether students accomplished the goals and objectives or not with the tools. During the educational measurement and evaluation process, assessing tools such as multiple choice, short-answer items, true-false items, matching items, essay questions, problem solving questions and others must be used to determine student learning activities in the instruction by teacher. These assessing tools should have reliability and validity characteristics to determine learning outcomes. These four elements are usually used to create an instructional design model.

There are four kinds of instructional models (Gustafson, 1996). These are classroom model, product model, instructional systems models, and trends and issues. The classroom models such as Gerlack& Ely, Kemp, Heinich, and Reiser&Dick are designed teacher oriented based. Teachers can use this model to design instruction. The product models such as Bergman & Moore and Van Patten are interested in more producing instructional products either for specific clients or for commercial marketing. Instructional system model such as Branson, Seels& Glasgow, Bridggs, Gagne, Smith &Ragan, Gentry and Dick Carey are designed for a complete college course. This model always requires a team effort to design instruction. There are some trends and issues in instructional design models. Hypermedia or internet is one of them. It affects instructional design. It is another area generating considerable excitement and innovation in the design of education and training environments (Gustafson, 1996). The other one is constructivism. It has also affected instruction process. It has gained considerable attention from educators dissatisfied with

behaviorism and cognitive psychology. It is based on the belief that all individuals construct their own reality.

Conceptual Framework

This case study concentrated to the use of instructional plan in teaching mathematics. The scholars like Ghimire (2011), Subedi (2004) and Sharma (2005), Gustafson (1996) have supported to design the conceptual framework. They have provided the clear cut ideas about how to form it. The following framework is drawn from the above theoretical and empirical literature which was proposed as the conceptual framework.



Source: Ghimire 2011, Subedi 2004, Sharma 2005, Gustafson 1996

Chapter-III

METHODS AND PROCEDURES

This chapter describes the design of the plan and producer of study. The present research focused on "Situation analysis of using instructional planning teaching mathematics at secondary level." The present research is type of qualitative research. This chapter contains some sub heading such as research site, instruments, tools, validation of tools, and procedure of data collection analysis and interpretation of data.

Design of the Study

The research design is a logical and systematic planning and direction of piece of research. Kerlinger (1995) states that "Research is the plan, structure and strategies of investigation conceived so as obtain answer to research question and control variance." Simply research design is an overall plan or scheme. So, the research applied the case study in interpretative research design in nature.

Selection of Respondents

To investigate the research problem of this research "Situation Analysis of Using Instructional Plan in Teaching Mathematics at Secondary Level," This is a case study which is interpretive in nature where 'Use of instructional plan in teaching mathematics' is a case where only one respondent or only one school can't provide sufficient information or we can't generalized the situation of using instructional plane by taking only one school or respondents so the researcher selected the private and public schools including rural and urban area of the Rupandedi district. To select the respondents the researcher used the convenience sampling and with the help of this sampling method. The researcher selected respondents from 5 private and 5 public

secondary schools. The respondents of this study were altogether forty i.e. 10 students, 10 head teacher, 10 mathematics teacher and 10 chairperson.

Tools for the Study

The researcher used primary and secondary data to fulfill this research work. To collect the primary data for this qualitative interpretive study the interview schedule, opinionnaire and observation form were instruments of the study. The tools were developed upon the analysis of situation of using instructional plan in class.

In-depth Interview

In-depth interview is one of the most important tools for data collection in qualitative research. So the researcher used this tool to find the cause of not using instructional plan and teacher's opinion towards the use of instructional plan.

Interview was taken from the school teacher and head teacher of the sample secondary school. The researcher took 3times in-depth interview for secondary level mathematics teacher and two times for head teacher from the help of interview guidelines has attached in Appendix-I and II.

Open Questionnaire

The open questionnaire is a tool for research from which we can collect the data as qualitative style of getting any person's attitude thought and opinion. So the researcher applied this tool to find the situation of using instructional plan in teaching mathematics at secondary level in private and public school. Similarly, the open questionnaire was used to find the cause of not using instructional plan in the classroom with the ten students and ten chair person of management committee of selected school.

Observation

Observation is also an important tool for data collection. So the researcher applied this tool for data collections to find out situation of using instructional plan in teaching mathematics at secondary level in this study. All the schools which are under sample are observed by the observer to know about the situation of school environment and to know about the condition of classroom teaching.

Validation of Tools

For the validation of instruments the researcher consulted with the supervisor of thesis and sampled teacher who are experienced and qualified mathematics teacher and also with mathematics researcher. The tools are constructed on the basis of different related literatures.

Data Collection Procedure

Data collection is most important side of the research. If we may have wrong process in data collection, then they obtained data can't provide as the good result also. In data collection procedure the researcher may have many difficulties also. So I applied the following steps: The researcher visited all the sample school with the request letter from the Department of Mathematics Education in Kirtipur. Then, the researcher requested and explained the purpose of the visit. Then the researcher used the tool of data collection as in depth interview, opinionnaire, observation and in-depth interview.

Process of Data Analysis and Interpretation

Process of data analysis and interpretation is most important part of the research. Data analysis process involves reducing and organizing the data, synthesizing, searching for significant patterns and discovering what is important. (Any et al, Opcit and 65). To analyze the data of the study analytic and descriptive

methods were adopted logically in verbal way maintaining context sensitivity so as to avoid personal bias on research. The researcher read all the data to obtain the general sense. The researcher collected the information with the help of interview guideline, opinionnaire and observation guideline which is given in Appendix-I, II, III, IV and V. The collected information was categorized according to category of the respondents and different themes given in the text of interviews, opinionnaire and observation note. Also, the collected information and response were categorized according to identified research variables on the conceptual understanding of the research. The triangulation between the respondent views theoretical evidence and the information obtain by observation were implemented. The cross match method was conducted between theoretical evidence and empirical evidence to produce proper meaning and conclusion to address the research question.

Chapter – IV

ANALYSIS AD INTERPRETATION OF DATA

This chapter deals with the analysis and interpretation of the collected data derived from interpretation of collected data derived from the case study. The main aim of this study is to explain the opinion of secondary level math-teacher's about instructional plan and use of it. In-depth interview was taken to the focused mathematics teacher and head teachers. Moreover, the opinionnaire was used to find out opinion or views of students and head teacher. The researcher take interview to the mathematics teachers and head teacher and found out the accurate current issues and challenges of using instructional plan and reasons of not using instructional plan in teaching mathematics at secondary level.

The collected information were analyzed and described in their perspectives under the following topics.

-) Opinion of Secondary Level mathematics Teachers about instructional plan and use of it.
-) Situation of school about using instructional plan in teaching mathematics.
-) The cause of not using Instructional plan.

Teacher's Opinion Towards Using Instructional Plan

Instructional plan is a systematic plan made by teachers to make teaching learning effective and meaningful. In general, instructional planning is preparation for teaching and learning including construction of goals, objectives, institutional assessment and methodology. It is the systematic planning, developing, evaluating and managing the educational process based on principles of learning of instruction. We can say that the instructional plan is overall plan for the teacher for effective teaching.

Under this topic the researcher tried to find different attitudes, beliefs and thoughts of mathematics teachers towards using instructional plan by using the in depth interview, opinionnaire and observation. When the researcher asked the question what is instructional planning? The following responses were obtained.

"Instructional planning should be prepared by the mathematics teacher to create good teaching environment and instructional planning is very essential for the mathematics teachers." (Teacher's view)

"Instruction plan is a systematic preparation for teaching learning activities. Instructional plan is used to motivate the students towards learning mathematics."

The teacher must use instructional plan while teaching mathematics."

(Teacher's view)

These views indicate that instructional plan is an essential element for teaching learning mathematics at secondary level. These given views were taken from the well-experienced government school teachers. According to their views, the instruction plan is crucial for successfully teaching. It shows that they are fully positive towards use of instructional plan.

Instructional design pays attention to instruction from learners perspective than from the content perspective which is traditional approach (Kenp, Morrison and Ross,1994). Thus, the importance of instructional design is seen from the fact that instructional design is based on learner centered technique. While teaching by making instructional plan, the teacher tries their best to address the wishes, needs and feelings of the students. Instructional planning is an essential skill for teaching mathematics to students with learning disabilities and other struggling learners.

On the other hand when the researcher asked the math teacher a question, do you prepare and use instructional plan in teaching mathematics? They told us:

"Yes, I prepare and use instructional plan to teach mathematics. To make instructional plan is better but it is time consuming." (Teacher's view)

"I always prepare and use instructional plan in teaching mathematics although it is very challenging to manage time". (Teacher's view)

The teachers accepted that he prepared and used instructional plan in teaching mathematics. It shows that the teachers are aware of the significant role of instructional plan for effective teaching. According to him, preparing and using instructional plan is better but it is time consuming. They seemed positive towards the use of instructional plan in teaching mathematics.

"No, I do not prepare and use instructional plan for teaching mathematics The teacher who is experienced and well-trained does not necessary to use instructional plan". (Teacher's view)

"No, I do not prepare and use instructional plan in teaching mathematics. It is not compulsory to use and make instructional plan even it will be beneficial to use it." (Teacher's view)

The above given respondents replied they did not prepare and use instructional plan. According to these views, experienced and well-trained teachers did not need to prepare and use instructional plan. They opined that it is not compulsory to use and make it. It would be beneficial to use it. It makes clear that it would be beneficial to construct and use instructional plan in teaching mathematics at secondary level. It is known that majority of the mathematics teachers did not prepare and use instructional plan.

The researcher asked this question to the math teacher why do you use instructional plan before teaching mathematics?

“As the math teacher, we use instructional plan to make teaching learning activities interesting, meaningful, memorable and purposeful. Instructional plan is a former plan for teaching mathematics. The experienced teacher can teach only with mental preparation.” (Mathematics teacher’ view)

“I use instructional plan to make mathematics learning effective and long lasting”. (Mathematics teachers’ view)

The mathematics teachers viewed that instructional plan is essential for interesting, meaningful, memorable and purposeful mathematics learning. The teacher opined that instructional plan is a systematic plan for teaching mathematics effectively and meaningfully. He/she was in favour of using instructional plan in teaching mathematics. They moreover opined that the experienced teacher could teach mathematics only with mental preparation. It means that without making and using instructional plan, the experienced mathematics teacher could teach only with their mental preparation.

Instructional plan is systematic planning for effective and meaningful mathematics learning. It is crucial for successfully mathematics learning. (Reiser & Dick, 1986)

On the basis of the above analysis and interpretation of data, it seems that most of math teacher were well known about instructional plan but majority of the math teachers were not using instruction plan in mathematics at secondary level. Although, they were slightly positive towards the use of instructional plan, they neglected to prepare it and use it in teaching mathematics. It has been clear that mathematics learning and teaching clear that mathematic learning and teaching becomes boring and monotonous without making and using instructional plan. Some

experienced teacher opined that capable teacher could teach mathematics without using instructional plan by the help of mental preparation.

The attitudes and beliefs of mathematics teacher about the use of the instructional plan are crucial for successfully teaching mathematics at secondary level. If the attitudes and beliefs of math teacher towards the use of the instructional plan are positive, it will be beneficial (Ghimire, 2011).

It shows that the majority of the mathematics teachers' opinions, thoughts, and attitudes towards the use of instructional plan were not positive.

Situation of School for Using Instructional Plan

Teaching learning environment is a crucial for successfully learning. All the activities which conducted in the schools come under school environment. It is one of the basic components of total educational system. School is considered as the second home of children whereas teachers, students and other staffs play the role as the family members. Teacher's control guide and provide information about information about book and current time. School has to maintain rules and regulation of the school and they have to be formal in school period. The home environment is different from school environment. No matter how the school environment is different from social environment, it has to be a deep relation with society. Instructional plan is the foundation of learning which facilitates and guides the math teacher.

Instruction is a systematic process in which every components i.e. teacher, students, materials and learning environment is crucial to successfully learning. (Dick and Carley, 1996). Here, Dick and Carley also considered learning environment as one of the prominent element of education process. Theories related to learning and child development is considered with the learning environment as the foundation of learning mathematics.

Math Lab and Materials

Instructional plan is systematic plan which considers the teachers students and learning environment as the vital element of whole educational process. For the effective use of instructional plan the suitable school environment must be created. Materials and math lab comes under school environment. The school environment must be suitable for effective implementation of instructional plan.

During the interview the researcher asked questions do you have appropriate materials and math lab in your school? They replied us:

"We have enough math lab and essential materials related to mathematics. So we have a suitable environment in our school to prepare and use instructional plan."

(Head Teacher)

"There is enough teaching materials and math lab. So it is comfortable to use instructional plan in teaching mathematics."

(Chairperson)

According to the views presented above head teacher and chairperson viewed that there were enough teaching materials and math lab. It shows that they were positive towards the availability of materials and math lab in their own school.

"According to the demand of Math teacher there are not appropriate teaching materials and math lab in the school".

(Teacher)

"There is the lack of materials and math lab. Teacher sometimes uses the instructional materials and math lab."

(Student)

On the other hand, the mathematics teacher and students answered that we could not get appropriate teaching materials and math lab for the effective implementation of instructional plan in teaching mathematics.

As a researcher, I visited schools to find out the condition of availability of materials and math lab. I found that the majority of government schools did not contain appropriate math lab and materials. On the other hand, while observing private school, I found that most of the boarding school contained appropriate teaching materials and math lab.

School improvement theory says that there must be close relation between teachers and students. The lack of relation gap, the learning environment is not good for using instructional plan. The availability of materials and math lab is also one of the prominent factors to make and use instructional plan (Meyan, Eduard, Geror, Diana, 2009).

On the basis of above discussion and interpretation, the researcher came to the conclusion that math lab and materials are essential for managing suitable school environment. Moreover, the school environment must be properly managed for effective implementation of instructional plan.

Number of Students and Role of School Administration

Number of students and Roles of school administration are also prominent factor of school environment. If the number of students is more than 50, in a single class, it creates difficulty to the teacher to make materials and instruction plan and use them in teaching mathematics. On the other hand, school administration plays vital role to create suitable environment to make and use instructional plan.

Instructional plan is a systematic plan for teachers for teaching effectively. School administration plays positive role to create suitable school environment for implementing instructional plan properly. (Meyan, Eduard, Geror, Diano, 2009)

When the researcher asked the question about the number of students and roles of school administration, they responded us:

"We have appropriate number of students and effective school administration."

(Chairperson)

"We have created good school administration whereas the number of students differs according the class to class. The school administration has properly managed the number of students."

(Principal)

Here, the chairperson and principal replied that there was effective and capable school administration properly managed the number of the students .The school administration plays crucial role to create good school environment.

"Our school administration is too much strict" In somehow, school administration should be flexible to the teacher to motivate them to construct the instructional plan. Moreover, the number of students is more than 50 in some classes."

(Teacher)

This views shows that school doesn't have good school environment. The number of students were not properly managed to use instructional plan. It has been clear that the majority of school had poor school administration. It means that the managing way of schools was not satisfactory.

For the proper validity and reliability of collected information, I visited the school and observed the school administration and number of students. While observing the school as a whole, I found that nearly half of the schools possessed weak school administration whereas the management of number of students was not satisfactory.

Instructional plan is a systematic plan for teachers for teaching effectively. School administration plays positive role to create suitable school environment for implementing instructional plan properly. (Meyan, Eduard, Geror, Diano, 2009)

From the analysis and interpretation of collected information by using opinionnaire, in-depth interview and observation, the researcher found that number of

the students and role of school management are crucial for creating good school environment.

Rules and Regulations of School

Rules and regulation of school is also prominent factor of school environment. The implementation of rules and regulation is essential influential for creating suitable school environment for the implementation of instructional plan.

The researcher asked the question how do implement the rules and regulation of the school ? They responded that:

"We possess strict rules and regulation at school that's why all the students and teacher are regular and well disciplined." (Teacher's view)

"Rules and regulation of our school are effective and practical that's why it is easy to implement to these rules and regulation." (Head Teacher's View)

Math teacher and head teacher here replied that the rules and regulation was effective, practical and meaningful. It makes easier to the math teacher to implement the rules and regulation at school. They moreover viewed that they possessed the strict rules and regulation at school that's why almost students and teacher were regular and disciplined.

"The implementation of rules and regulations is not satisfactory. It causes the increasing number irregular and undisciplined". (Chairperson's view)

"The rules and regulation of school is too much strict more than it should be which causes somehow gap between the teacher and students" (Student's View)

On the other hand the chairperson and students viewed that the implementation of rules and regulation at school was not systematic. Moreover, they opined that the rules and regulation of school was too much strict. It causes the gap between math teacher and students. Thus, the teachers and students became irregular

and undisciplined. It shows the views of students and the chairperson were against the views the math teacher and head teacher.

I visited schools and observed policy and implementation of rules and regulations at school. While observing school as a whole, I found that most of the government schools had poor implementation of rules and regulations at school where as majority of the private schools possessed strict rules and regulations at school. That's why most of the students and the teachers of private school were regular and disciplined. On the opposite of it, many students of the government school were irregular and undisciplined.

To build career of students, student should follow school rules and regulation by the teacher and students. The students should be regular and discipline for good learning and achievement. (Budhathoki, 2016)

As a researcher, I found that most of the government school did not possess essential physical facilities. There is the lack of proper buildings, desks and bench, library and drinking water in the government school whereas the private school possessed nearly all the physical facilities. I found that some government school consisted of more students in the class. Majority of government school had loose rules and regulation whereas most of the boarding school had implemented the strict rules and regulation. Similarly, I got the fact that there were not sufficient math lab in the government school. Similarly, I found that there were not enough material related to the mathematics learning both in government and private school. Moreover, I noticed that there was poor managing system in government schools whereas the roles of management committee of private/ boarding school seemed satisfactory.

From the above analysis and interpretation of collected information, it becomes clear that there should be suitable school environment for purposeful and

effective implementation of instructional plan in teaching mathematics at secondary level.

Causes of Not Using Instructional Plan

An instructional plan is crucial for successfully learning. The teacher could not enter into the classroom without taking instructional plan i.e. daily lesson plan.

Without using instructional plan, teaching mathematics becomes monotonous and

boring. Instructional plan is used to provide clear concept of topic to the students.

Instructional plan is essential to the mathematics teacher. Instruction plan is used to encourage and motivate the pupils towards the lesson. The teaching learning activities would be interesting if the teacher utilized the instructional plan while teaching mathematics.

According to the Reiser and Dick, (1996), an instruction design mode gives method and implication to design instruction. During the instructional design model, instructional design model helps educator to visualize the problems. If the instructional design model solves the learning teaching problem it means that it is an effective instruction. Effective instruction is an instruction that enables students to acquire specified skills knowledge and attitudes. Instructional design model also helps to the researcher to find out problems faced by mathematics teacher while making and using instructional plan. Similarly, instructional plan also helps the mathematics teacher to find out the causes of not using instructional plan in teaching mathematics and finds out the solution of these problems. (Meyan, Edward Gerut, Diana, 2009)

I conducted the in-depth interview with teacher and head teacher to find out the causes of not using instructional plan. The researcher asked some questions with teacher head teacher and chairperson about the causes of not using instructional plan.

The causes of not using instructional plan are explained in details below:

Overload to the Teacher

Overload to the teacher is one of the prime causes of not using instructional plan. If the teacher does not have proper time and effort, he/ she will not be capable to prepare and use instructional plan.

The researcher asked the question what are the prominent cause of not using instructional plan? They answered that:

"Overload is the one of the most influential causes of not using instructional plan. If the teacher has to face overload in the schools, the teacher could not manage time and effort for using instructional plan in teaching math. I have to teach 36 periods per week that's why I am also facing the problem of overload in my school."

(Teacher's view)

The teacher viewed that overload is the major causes of not using instructional plan. Here, the teacher was suffering from the overload in his/ her school that's why the teacher could not manage the proper time and energy to prepare and use instructional plan in teaching mathematics.

"Overload is one of the prime causes of not using instructional plan. There is not overload in our school"

(The head teacher's view)

"Among the causes of not using instructional plan overload to the teacher is the one of them. We manage proper time to the teachers to prepare and use it."

(Chairperson's view)

Both respondents viewed that overload is one of the influential causes of not using instructional plan. They similarly opined that they got free time and energy for using instructional plan in teaching mathematics

While observing the school, I found that most of the teachers from the private schools did not get proper time and effort for making and using instructional plan where as the teachers from government schools got proper time and effort for using instructional plan in teaching mathematics at secondary level.

Overload to the teachers seems the problematic for using instructional plan in teaching mathematics. Overload to the teacher is one of the prime causes of not using instructional plan. If the teacher does not have proper time and effort, he/ she will not be capable to prepare and use instructional plan. (Ghimire, 2011)

As a researcher, I conclude that overload to the teacher is fundamentally considered as one of the prime causes of not using instructional plan. If the teachers faced the overload, they could not manage proper time and effort for making and using instructional plan in teaching mathematics at secondary level.

Motivation to the Teachers

Motivation is one of the essential and influential element of whole education system. Likewise, motivation is regarded as one of the influential factors in teaching mathematics to both teachers and students. Due to the motivation provided to the teacher, teacher is motivated to prepare and use the instructional plan.

"Lack of motivation for the teachers is considered as one of causes of not using instructional plan." (Teacher's view)

"Motivation is one of the essential factors for both students and teacher. Due to the motivation provided to the teacher, teacher is motivated to prepare and use the instructional plan." (Head teacher' view)

"Motivation is essential and influential factor for whole education system." (Chairperson's view)

According to the views given above, motivation is essential for successfully learning mathematics. They moreover viewed that lack of motivation to the teacher is one of the prime causes of not using instructional plan in teaching math at secondary level.

As a researcher, I visited and observed the schools. While observing the teachers, I found that some government teachers were not motivated for preparing and using instructional plan. Moreover, majority of the teachers from private schools were not motivated to use instructional plan.

The main function of motivation here is to motivate the teachers for using instructional plan. Moreover, without motivation, teaching learning process or activities becomes incomplete (Ghimire, 2011).

The researcher found that motivation to the mathematics teachers is vital for meaningful, interesting and memorable learning. If motivation is given to the teacher, the teacher will be motivated to make and use instructional plan in teaching mathematics.

Teacher's Thought and Opinion

Thought and opinion of the teacher should be positive towards the use of instructional plan. Here, the teachers' thought and opinion function as a barrier for making instructional plan. It means teachers' thought and opinion is taken as the causes of not using instructional plan.

"Teacher's thought and opinion is considered as one of the prominent cause of not using the instructional plan." (Teacher's view)

"Teacher's through and opinion is also considered as one of the prime cause of not using instruction plan." (Head teacher)

“We should be aware of teacher’ thought and opinion is one of the prominent causes. It is known that thought and opinion of the teacher is one of major causes of not using instructional plan.” (Chairperson’s view)

The given views above showed that the teacher’s thought and opinion is one of the prime causes of not using instructional plan. Here, chairperson, teacher and head teacher presented the similar views about the teacher’ thought and opinion.

To ensure the validity and reliability of the collected information, I observed the teachers’ thought and opinion towards the use of instructional plan. While visiting schools I found that majority of the teachers from private school had not positive thought and opinion towards the use of it. That’s why it is considered as one the major causes of not using the instructional plan.

Teacher’s thought and opinion refers to the perspectives of the teacher. If the teacher’s thought and opinion is negative, it will be difficult to prepare and use the instructional plan. Here, the teachers thought and opinion is taken as the major causes of not using instructional plan. (Meyan, Edward, Geror,Diano 20)

By analyzing and interpreting the collected data, I came to the conclusion that teachers’ thought opinion is basically considered as one of the major cause of not using instructional plan. It seems problematic that majority of the mathematics teacher were not using instructional plan due the lack of positive thought and opinion of the teachers.

The Role of Management Committee

School management committee is basically considered as one of the prime causes of not using instructional plan. If the management committee is poor, it will be difficult to make and use instructional plan.

The researcher asked questions to the respondents about the role of management committee as the cause of not using instructional plan. They told us:

"Role of management committee is one of the causes of not using instructional plan. If the management committee is poor, it will be difficult to make and use instructional plan." (Chairperson's view)

"Poor management system is also one of the major causes of not using instructional plan." (Head teacher's view)

"Among the major causes of not using instructional plan, the role of management committee is also one of the prominent causes of not using instructional plan." (Teacher's view)

From the above views of respondents, it makes clear that the role of management committee is one of the crucial causes of not using instructional plan. They viewed that the poor management committee causes various obstacle and difficulties for using instructional plan.

Moreover, I visited the schools and observed the condition of management committee at school. I found that more than half of the schools possessed poor management committee. This poor management committee was the prime cause of not using instructional plan in teaching mathematics.

The role of Management committee is fundamentally considered as one prime cause of not using instructional plan. If the management committee functions properly, it will facilitates the teacher to prepare and use instructional plan. On the other hand, the weak management committee functions as the barrier for using instructional plan. (Dick and Carly, 1996)

The researcher opined that the role management committee is fundamentally considered as one of the prominent cause of not using instructional plan in teaching

mathematics. Furthermore, it seems problematic because half of the school possessed the incapable school management committee.

Teacher Qualification and Teacher Training

For the effective implementation of the instructional plan in teaching math, the math teachers should be well trained and qualified. Otherwise it would be a problematic for preparing and using instructional plan.

The researcher asked the respondents about teachers' qualification and teacher training as one of the major causes of not using instructional plan. They replied us:

"Teacher qualification and teacher training are the prominent cause of not using instructional plan but there are less number of qualified and trained teachers."

(Head teacher' view)

"Teacher's qualification and lack of teacher training are the prominent causes of not using instructional plan." There are many unqualified teachers in both boarding and government school."

(Teacher's View)

The qualification of the teachers and teacher training are the most influential causes of not using instructional plan."

(Chairperson's view)

These views shows that the teacher and teacher qualification, training are the causes of not using instructional plan. If a teacher is unqualified and untrained he/she will be unable to prepare and use instructional plan. There were less number of trained and qualified mathematics teacher are secondary level in most of the schools.

I have also observed the school to find out the validity and reliability of the collected information. While observing the schools I found that there were less number of qualified and trained teachers in boarding school whereas only the least number of teachers from government school were unqualified and untrained.

Mathematics teacher has to face many challenges and issues related to the use of instructional plan in teaching mathematics. Here untrained and unqualified teachers are regarded as the causes of not using instructional plan.(Shrestha, 1982)

On the basis of above discussion and interpretation, it makes clear that teacher training and teacher qualification are the prominent causes of not using instructional plan.

Facilities and Salary Given To the Teachers

The facilities and salary given to the teacher plays vital role for creating favorable environment for making and using instructional plan in teaching mathematics. Here, facilities and salary given to the teacher is also one of the prominent causes of not using instructional plan.

"Facilities and salary given to the teacher is also considered as the causes of not using instructional plan". (Teacher's view)

"Among the causes of not using instructional plan, salary and facilities given to the teacher is one of the prominent one". (Head teacher's view)

"Facilities and money provided to the teachers are the major causes of not using instructional plan in teaching math." (Chairperson's view)

These views showed that facilities and money provided to them are the prime causes of not using instructional plan. They viewed that if the teacher could get appropriate salary and other facilities, the teacher would be encouraged and motivated for using instructional plan in teaching mathematics.

As a researcher, I visited the school and observed the condition of salary and other facilities given to the math teacher at school. While observing, I found one of the crucial fact that the math teachers of the private school did not get the enough salary and other facilities where as teachers of government schools got the appropriate salary and other facilities.

For the successfully implementation of the instructional plan, teachers should be satisfied to his salary and other facilities given to the teachers. In other words, school should manage appropriate salary and other facilities given to the math teachers. Inappropriate salary and less facilities given to the teacher is also a prime cause of not using instructional plan. (Meyan, Edward, Geror and Diana, 2009)

By analyzing and interpreting the collected data, I came to the conclusion that teachers' salary and other facilities are basically considered as one of the major causes of not using instructional plan. It seems problematic that most of private schools did not give appropriate salary and other facilities to the teachers.

The researcher found that overload for teachers, poor or weak management committee, teacher qualification, lack of teacher training, poor school supervision, teacher's thought and beliefs, teacher's facilities and inappropriate salary of teacher were considered as the causes of not using instructional plan. The teacher who was unqualified and untrained, he/she could not prepare and use the instructional plan in teaching mathematics. If the management committee did not conduct function properly the situation of school would be poor, it created the problems and obstacles to apply instructional plan in teaching mathematics. It makes clear that teachers should be well-prepared himself for the use of instructional plan in classroom.

As a researcher, the researcher visited the schools and observed there to find out the causes of not using instructional plan. During the visiting period at private school, the researcher found that teachers were suffering from the overload. Teachers did not have proper time to prepare to and use instructional plan. Similarly, I got one of the crucial facts that private schools did not provide appropriate salary and other facilities to the teacher. The teacher who does not satisfied to his salary neglected to prepare and use instructional plan in teaching mathematics. Majority of the boarding

school had poor managing system. On the other hand I found that there were the lack of physical facilities like drinking water, proper building, desk, bench, playground, math lab, libraries etc. Most of the teachers of boarding school were untrained and inexperienced.

According to Ghimire, 2011, Teacher's family background and their attitudes and beliefs are considered as the major cause of not using instructional plan.

Similarly, lack of motivation to the teachers, lack of proper rules and regulation at school, lack of teacher training and poor school supervision are the major causes of not using instructional plan while teaching mathematics.

On the basis of above analysis and interpretation, the researcher concluded that the major causes of not using instructional plan are poor school supervision, the rules and regulations at school, lack of teacher training and lack of physical facilities. Similarly, lack of motivation of teacher and inappropriate teacher's salary are also considered as the prominent causes of not using instructional plan. Moreover, overload for teacher's and the teacher's thought and belief are also taken as prime causes of not using instructional plan.

As a researcher, I found that majority of the mathematics teacher were not using the instructional plan in teaching mathematics at secondary level. Due to the various obstacles, issues and challenges that the math teacher faced, it would be problematic to prepare and use instructional plan in teaching math.

There is the vast difference between using and not using instructional plan in teaching mathematics. Here, if the math teacher uses the instructional plan, the math learning will be interesting, meaningful, memorable, purposeful and beneficial. On the other hand, if the math teacher does not use instructional plan in teaching math, the math learning will be boring and monotonous.

Chapter - IV

SUMMARY, FINDINGS, CONCLUSION AN RECOMMENDATION

After analysis and interpretation of the collected information, an attempt has been made to summarize, to present findings and recommendation. The first part of this chapter includes the summary of the whole study. Then it includes findings, conclusions and recommendation respectively.

Summary of the Study

The main objectives of this thesis was to explain the opinions of secondary level math teachers about instructional plan to examine the situation of school about using instructional plan and to explain the causes of not using instructional plan in teaching mathematics.

To fulfill the purposes of the study, the researcher used of various activities like in-depth interview, opinionnaire and observation. The researcher chose altogether 10 secondary level school (i.e. five from government school and five from boarding school) of Rupandehi district. Likewise, the researcher selected 10 secondary math teacher, 10 head teachers, 10 students and 10 chairperson (i.e. five respondents from government school and five from private schools in every group). As a researcher, I spent one month for the observation of the teacher to find out about use of instructional plan in teaching mathematics. Then, the researcher asked many questions to the teachers, students, head teacher and chairperson to find out that whether teachers use in instructional plan or not. The researchers categorized the collected information according to their respected categories are different themes were considered as a code. Moreover, the researcher created observation form and interview schedule as appendixes. The similar code version of the respondent were

collected together and explained in their perspectives. Triangulation was used to maintain the validity and reliability of data.

Findings of the Study

The prime objective of this thesis was to find out the opinions of teachers towards the use of instructional plan was positive and influential. The findings of the study are listed below:

-) Majority of teachers did not prepare and uses instructional plan in teaching mathematics.
-) Most of the teacher did not give attention towards making and using teaching materials.
-) More than half of school had poor management system and poor supervision.
-) Most of the government school did not possess the appropriate physical facilities which are one of the prominent barriers to use instruction plan.
-) Majority of the mathematics classes were not properly managed regarding to the number of the students in the classroom.
-) Most of the boarding school implemented the rules and regulation strictly which is one of the factors to create good school environment.
-) On the other hand, there were loose rules and regulation in the government school which is one of the causes of not using instructional plan.
-) The teaching materials were less used in mathematics teaching.
-) The physical condition of schools was satisfactory in private school. There were library, computer and math lab. But in government school, there were less mathematics instruments in government school.

-) The teachers were actively participated in mathematics teachings. They emphasized in classroom practiced and homework of students.
-) Some teachers prepared and used instructional plan.
-) Majority of the teachers of private school did not prepare and use instructional plan.
-) The classroom environment was controlled by the mathematics teacher.
-) Overload to the teachers, teacher's satisfaction towards his job, poor management system etc. are the causes of not using instructional plan.

Hence, the major factors influencing school environment were availability of physical facilities, role of school management committee, the rules and regulation of the school, availability material and math lab for creating good school environment for using instructional plan in teaching mathematics at secondary level.

Conclusion

From the above findings of the study, it is concluded that the mathematics teacher does not regularly prepare and use instructional plan in teaching mathematics. The use of instructional plan is based on situation or environment of school. The school environment is also influenced by availability of physical facilities, implementation of rules and regulation, availability of materials and math lab, roles of management committee etc. Moreover, support from management committee/administration and appropriate number of students in the class are also considered as the prominent factor for creating good school environment. In the other hand, overload to the teachers, role of management committee, qualification of teachers, teacher training and poor school supervision are the prime causes of not using instructional plan. Similarly, teachers' satisfaction towards job and teacher's thoughts and beliefs are also major causes of not using instructional plan. This study

shows that if the teachers are motivated and qualified, he can create and use instructional plan. Moreover, this study shows that there should be a good school environment for effective use of instructional plan in teaching mathematics at secondary level.

Recommendations

This study is about the situational analysis of the use of instructional plan in teaching mathematics at secondary level. The findings and conclusion drawn from this study cannot be generalized in all the schools. But it could be a strategy to other schools in order to use instructional plan properly in learning mathematics. The mathematics teacher should be aware to enhance the use of instructional plan in teaching learning process.

After analyzing conclusion and implication of the study the researcher presented the following recommendations.

-) The mathematics teacher should be well-trained, experienced and qualified for the effective implementation of instructional plan in teaching mathematics.
-) All the necessarily physical facilities should be available in the school.
-) The materials and math lab should be provided to the mathematics teachers for making and using instructional plan.
-) To encourage and motivate the mathematics teacher to prepare and use the instructional plan, school should manage proper salary and other facilities to the teacher.
-) For making effective instructional plan, there should be good relation between experienced teacher and novice teacher.

-) There should be satisfactory school supervision and good school environment for using instructional pan.
-) School should manage proper time for the mathematics teacher to prepare instructional plan and use it in teaching mathematics at secondary level.
-) Every mathematics teacher should make instructional plan.

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Appendix - A

Questions for Students

Name :

School Name:

Class :

Age:

Please provide your responses to the following questions:

1. Does your mathematics teacher give class work regularly?

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.....

2. Does your mathematics teacher give homework regularly?

.....
.....

3. Does the mathematics teacher complete the course in time?

.....
.....

4. Does your teacher use instructional materials? If yes, what type of teaching materials does he/she use?

.....
.....

5. What do you think about the importance of making plan in teaching mathematics?

.....
.....

6. Do you feel difficulty talking to the teacher?

.....
.....

7. Does your mathematics teacher use extra references book except textbook?

.....
.....

8. Does your mathematics teacher have any confusion while teaching? If yes, what types of confusions does he have?

.....
.....

9. How does your mathematics teacher face any the problems and challenges while teaching mathematics?

.....
.....

Appendix - B

Questions for Chairperson

Qualification :

School:

Age :

Sex:

Please provide your responses to the following questions:

1. How do you make appropriate environment to make instructional planning? How do you afford the mathematics teacher to implement instructional plan in teaching mathematics at secondary level?

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.....

2. Do you observe the class of mathematics teacher? How are the mathematics teacher presented in classroom at secondary level?

.....
.....

3. Does your teacher prepare and use instructional plan in mathematics teaching?

.....
.....

4. Do you conduct seminars, conferences and workshops related to using instructional plan effectively in teaching mathematics at secondary level?

.....
.....

5. How do you manage proper time to interact with mathematics teacher?

.....
.....

6. Are you satisfied with instructional plan made by mathematics teacher?

.....
.....

7. Do you have capable management system to implement instructional plan in your school?

.....
.....

8. How do you create mutual understanding with mathematics teacher?

.....
.....

Appendix - C

In Depth Interview Guidelines for Head Teacher

Name:

Date:

Qualification:

Name of School:

Experience:

Trainings:

The interview with head teacher had been taken on the basis of following topics.

Physical structure of school

Availability of materials and math lab in the school

Supervision of math teacher

Motivation to the math teacher

Rules and regulation of the school

Arrangement of the teacher training, seminar, conferences etc. at school

Support from school administration to the math teacher

Causes of not using instructional plan

Appendix - D

In Depth Interview Guidelines for Math Teacher

Name:

Date:

Qualification:

Name of School:

Experience:

Trainings:

The interview with mathematics teacher had been taken on the basis of following main topics.

Concept and importance of the instructional plan

Necessity of using instructional plan in teaching mathematics

Difference of between the condition of using instructional plan and not using instructional plan in teaching math

Availability of math lab and materials

Support from other teachers and school administration for preparing and using instructional plan

Number of students in mathematics classroom

Overload to the teachers

Conducting Teacher training, workshops, seminars, conferences at school

Money and facilities given to the math teacher

Causes of not using instructional plan

Appendix - E

Guidelines for Observation

Name of School:

Date:

While visiting schools, the researcher would observe the following topics:

Physical structure of school

Availability of math lab and material

School management and school environment

Relationship between math teacher and administration

Rules regulation of school

Classroom management and environment

Class observation of math teacher

Number of students in math class

Teacher' qualification and training

Role of management committee in school