Chapter I

Introduction

Background of the Study

Classroom management has received a great amount of attention in recent years and it is currently great problem for educators in the world. Classroom management is the skill in the organization and presentation of the lesson in such a way that learners are actively involved in the teaching learning process. In other word, classroom management is the ability of the teachers to manage time, space, resources, behaviors of the student, environment of the classroom etc. in teaching learning process. Capizza (2009, p.1) states classroom management as "establishing a well-organized plan for classroom that is conductive to instruction and learning for students with a variety of academic, social and behavioral needs". In this way classroom management is the concern of how the things are done in the classroom in effective way rather than the concern of how students behave.

Classroom management can be described as a process of combining behavioral, environmental and instructional factors that leads to a rewarding experience for teachers and students alike and facilitates a maximum amount of learning to occur in an efficient manner. In mathematics classrooms every day, students learn valuable concepts that help them to be successful in their mathematics careers throughout their lives. This success includes success in the current classes they are taking, success in future mathematics classes and success outside the context of schooling. Teachers hope that students will be able to take the important mathematical concepts that they have learned and apply them to future situations. But mathematics teachers and students have faced many problems in

the mathematics teaching and learning process. Also mathematics classroom management has many problems. School administration, mathematics teacher and students have main role in building better mathematics classroom. Without good and appropriate environment of the classroom, all attempts for teaching may be failure.

In a classroom, there should be a verity of arrangement for students' desks, such as circles for discussion, groups for group work and rows for test taking or individual works. Activity centers offer a student the opportunity to work on project or activities at his/her own space. A center needs to be created so it has a work space, a place to store tools and materials and a place of post instructions. Books and instructional materials need to be stored so that they can be retrieved and put away easily by students. Tool such as rulers, papers, scissors and the pencil sharpener need to be place so that students have access to them without disturbing other students. Also collecting and storing student mathematical work can be quickly become overwhelming if a plan is not a space. Files might be created for each student's for each subject or for groups of students to keep the record of student mathematical work.

Classroom management is the way or organizing the resources, pupil and helpers in your classroom so that teaching and learning can proceed in an efficient and safe manner. Management co-ordinates resources for achieve goals. Therefore to achieve educational goals, management should be properly done and cannot be separated from educational setting. The management process of education system consists of achieving the goals by getting the jobs done with and through people in the context of environment (Agrawal, 2005).

Wragg (1981, p.7) defines classroom management as "What teachers do to ensure that children engage in the task in hand, whatever they may be". Here, he focuses on teachers activities in managing classroom. How the teachers manage their classes depend upon what activities they do apply in the classroom. Successful and goal oriented learning is always directed by the activities that are implemented in the classroom. Activities that the teachers implement in the classes, not only to achieve the goal of learning, but also help to manage the class. According to Wragg's definition of classroom management, learning activities and good management of the class are co-related factors. Less emphasis on the one factor hinders then other. Thus classroom management is a management of physical as well as psychological management for creating learning environment. Hence the classroom management is one of the valuable aspect for effective teaching.

A well manage classroom provides the students more opportunities for mental growth and produces favorable marking conditions, conductive to good learning and makes classwork enjoyable and interesting. Progressive education is connected with providing every pupil with the facilities that encourage learning and opens the avenue for it. The school is lucked upon as the agency of society to provide these opportunities. A well manage mathematics classroom also makes the students to appreciate the values of time upon with future success depends. Thus effective mathematics teaching and learning is possible only in a well manage mathematics classroom.

Quality schools are defined by teachers' effectiveness and students' achievement under the auspices of building strong interpersonal skills. The relationship between Teacher and student is essential to ensuring a positive school classroom atmosphere.

Classroom management and disciplinary problems can be dealt with either on an individual basis (between student and teacher) or by group problem solving (class meeting). The latters are gradually released from teachers' supervision by becoming individually responsible. This is how both educators and students become co-participate in teaching learning process, striving to make the most of themselves and their collective experiences (Feoyen and Iverson, 1999).

Good classroom management encompasses effective and appropriate use of the board. Mathematics classroom management refers to co-operation and control of classroom activities related with teaching and learning mathematics. It is relatively confined to the more mechanical aspects of teaching learning activities. The main purpose of mathematics classroom management is to save time and energy. Some of the points, a teacher should consider in planning classroom management, regulations on seat plan and attendance, the handling of instructional materials, equipment and the guidance of students activities during the teaching learning activities in the classroom.

Classroom management is one of the challenges for teachers and teacher play various roles in a typical mathematics teaching classroom, but surely one of the most important is that of classroom manager. The skillful teacher can manage the classroom efficiently. Effective mathematics teaching and learning cannot take place in a poorly managed classroom. Effective teachers appear to be effective with students of all achievement levels regardless of the levels of heterogeneity in their classes. A skillful teacher manages the class properly and makes his class effective and relevant to the lesson. If the teacher is ineffective, students under that teachers' tutelage, will achieve inadequate progress academically, regardless of how similar or different they are

regarding their academic achievement. Hence, there is a great effect of mathematics classroom management in students' achievement. Classroom management and good discipline enhance the students learning in mathematics.

Kanchanpur is one of the developing districts in Nepal. It is situated in the far western part of Nepal and very far from Kathmandu, the capital city of Nepal. Some part of Kanchanpur district is well developed but the maximum part of Kanchanpur district is undeveloped regarding road, transportation, education, health services and many more facilities. Peoples are not much educated.

Statement of the Problem

Classroom management is the great problem to our teachers in recent days. If we want to make our house strong, we should make strong foundation. Similarly, secondary level students are also the foundation for higher level, so it will be appropriate to discuss the problems in managing mathematics teaching and learning classroom at secondary level. The study was connected with the problems in managing mathematics classroom at secondary level of Kanchanpur District. Among the different aspects of teaching learning process, classroom management is a crucial one. Effective learning takes place only when the teacher can play the effective manager's role in the classroom. So, classroom management is an art which facilitates teaching and learning.

In the context of Nepal, the students' achievement in mathematics is very low. So that everybody complaints against the teaching of mathematics and mathematics classroom. Kanchanpur District Education Office has written an article on "causes of low achievement in mathematics at secondary level" in 2074 B.S. The article showed that,

there was many causes like as school and home environment, classroom management, teacher attitudes in teaching mathematics, school administration, that have influenced the students' achievement in mathematics. In this article, lack of the proper management of the mathematics classroom has been analyzed as a main cause for low achievement in mathematics at secondary level. Also mathematics has not been able to become a favorite subject of the students. Also the number of students who read mathematics at higher level is declining. Classroom is one of the most important factor and heart of the mathematics teaching. When I was in SLC, there were 236 students in grade 10. Out of 236 students, only 54 students had passed the exam in mathematics. Consequently in higher secondary level, only nine students were admitted to mathematics subject.

Economically Nepal is a poor country. The government has not been able to provide adequate training for the mathematics teacher. The effective teaching in mathematics is only possible from the proper management of the classrooms. Hence, this study was tried to find out the problems in managing effective mathematics teaching and learning classroom and analyze the ways of effective management of mathematics classroom.

Objectives of the Study

The main objectives of this study are as follows:

- To find out the problems in managing mathematics teaching/learning classroom at secondary level.
- To seek out the ways of effective management of mathematical classroom.

Research Questions

The problems were based upon the solution related to the following questions.

- What are the problems while organizing and managing of actual mathematics classroom?
- What are the causes of problems arising for the effective management of the mathematics classroom?
- How to manage effective mathematics classroom?

Significance of the Study

The study mainly concerns with the mathematics classroom management in government aided schools. It shows the status of classroom management in the selected schools. "How can we manage mathematics classroom effectively" is one of the important issue in teaching mathematics. Students can learn affectively if the mathematics classroom is managed properly. This research is useful for mathematics teachers, readers as well as those who are engaged in mathematics teaching. The teachers who are teaching mathematics will be highly benefitted. Similarly, it will be fruitful for curriculum designers, textbook writers, teachers, students and other people interested in this field. This study can be used as a reference material to develop one's personal classroom management. Good classroom management makes easy to understand the students' personal and psychological needs, enhance the teacher student's relationship and optimize learning by responding to the academic needs of the individual students and the classroom as a whole. This study was showed the problems in managing mathematics classroom. This study helps to identify the strategies for the management of mathematics

classroom. The study will be useful for the school, mathematics teacher, students and related committee.

Delimitation of the Study

Each study is not rigorous, perfect and free from limitation. All studies have some short of delimitation. This study also has some delimitation, which are pointed as below:

- This study was limited in Kanchanpur district.
- This study was conducted to only government-aids school.
- This study was based on grade ten of Kanchanpur district.
- This study was limited to the mathematics teacher, school headmaster, school administration, students and mathematics classrooms of selected school.
- This study was based on the management of the mathematics classroom.

Definition of the Key Terms

The operational definition of the terms used in the study is very important to understand the study. The terms defined by researcher for this study are as follows:

Government-aids school. Government-aids schools are those schools which are conducted by government and local community.

Classroom management. Classroom management is the process of managing the physical facilities, students' behavior, teachers' responsibilities, instructional materials, students' work and involvement, peace environment in the classroom, good relationship between teacher and student and other resources that need for mathematics teaching and learning.

Instructional materials. Instructional Materials are those materials which facilitate the student to learn mathematics.

Student. The term "student" was restricted only to those students who were learning mathematics at secondary level of Kanchanpur district.

Teacher. The term "teacher" was restricted only to those teachers who were teaching mathematics at secondary level of Kanchanpur district.

Problem. Problem means any obstacles that may difficult to deal with or understand during the period of managing mathematics teaching/learning classroom.

Chapter II

Review of Related Literatures

Literature review is the process of locating, obtaining, reading, to find out the gap of the research and evaluating the research literature in the area of the search. This chapter attempts to present a review of related literature for the fulfillment of the purpose of study. It helps the researcher to know carried out in the area of his/her research project. This chapter describes the empirical literature, theoretical literature and the framework of this study.

Empirical Literature

Sapkota (2012) did a study about "Mathematics classroom teaching and teacher performance at secondary level". He state that the classroom management plays a vital role for achieve the goals which is an important part of school management. He found that most of the classroom did not have appropriate arrangement of students' desks, background and space etc. There was overcrowded classroom in mathematics teaching, no mathematics teaching materials are used and no records of students' activity were found there. In his research, mathematics is a way of thinking, organizing, analyzing and synthesizing a body of knowledge. So mathematics learning depends upon active participation creativity, discovery and interaction and in safe peace environment. Sapkota generally concluded that mathematics teaching is necessary part in active participation and for safe peace environment of students for meaningful learning. Furthermore, he found that mathematics classroom has its own aspects as physical resources management and performance of teacher.

Drucker (2003) did a study about "Management: task, responsibilities and practices". This report shows that the number of school has been increasing every day in all country. Therefore the issue of management and personal management is being a matter of discussion. School management has different aspects. They are physical and human resources management. When these aspects of management are not properly managed the schools are called under managed schools. Drucker generally concluded that there was low computers arrangement in the classrooms of the school and it is important to manage the computer in the classroom for learning moment. He also states that there was no proper management of educational materials in teaching learning process. In his research, teaching without educational materials is not effective. Therefore, according to Drucker, management of computer and instructional materials are the main problem of classroom management.

Bond (2007) in his article named "Questioning strategies that minimize classroom management problems" emphasized on the questioning strategies of classroom management. He found that asking questions are the important skill that teacher must need to develop for effective classroom management. According to his article, when the teacher asks questions to the students related to the subject, then students will be attentive to participating in the learning process. Otherwise students do not play attention to the learning process.

Dany (2015) did a research about "Mathematics classroom management". This research shows that most of schools in this research area have lack of physical facilities, inappropriate management of physical resources in mathematics classroom, lack of teaching materials and students' participation in teaching/learning process. The study also

showed that the accountability system in respect management is not active. Conventional style of management is taking place in institutions. The researcher suggested that the achievement of mathematics can be increase by managing mathematics classroom according to Zurich model of classroom management.

Chaulagain (2005) conducted a thesis entitled "A study on the problems faced by the secondary mathematics teacher in teaching geometry". The aim of this study was to find out the problems faced by mathematics teacher while teaching geometry in mathematics classroom at secondary level. He concluded that the teacher are facing problems due to various background characteristics of students, geometry curriculum and text, evaluation techniques, professional development of teaching schools administration and so on. He also found that the classroom should be managed physically as well as psychologically. To manage the classroom properly educational experts, teachers and students themselves should be conscious. He found that the physical resources play an important role for classroom management in secondary level.

Bista (1999) has carried out a research entitled "Some issue controlling school reform in Nepal". He was selected mathematics teachers of secondary schools along with their students by using simple random sampling. In his study, he used questionnaire, observation checklist and interview as the main tool of data collection. He focused in his research that teacher should not avoid the disruptive behavior like sleeping in the class, even participation, uneven participation etc. to make classroom successful. He tried to find out the different behavior of secondary level students that teacher has to face into the classroom. He also mentioned that home environment play key role in shaping disruptive behavior of the student.

Pathak (1986) conducted a study on the topic entitled "The problems faced by the teacher in Kathmandu district in the implementation of mathematics curriculum for lower secondary school". He administered a set of questionnaire to the lower secondary mathematics teachers, who had faced problems regarding to the mathematics curriculum, teaching methods and evaluation techniques. He took sixty five teachers as the sample. He found that, most mathematics teachers of Kathmandu district have been facing problems in the selecting proper evaluation device.

Ojha (2011) conduct his thesis entitled "Problems faced by teacher in teaching mathematics at secondary level". This study was located in Sindhupalchok district. This study was conducted only with classroom teaching problems in grade nine. For this study he had concluded that most of the problems are created by the large size of class, lack of physical facilities, lack of instructional materials, lack of motivation to learn mathematics are the poor part of students. He found that the large size of the classroom, lack of good supervision, lack of instructional materials, inadequacy of teachers training, lack of physical facilities etc. are the main problems while managing mathematics classroom.

Arends (2001, p.187) states "Classroom management is not an end itself but a part of a teachers overall leadership role". These views reflect classroom management as the holistic management of the instruction in the mathematics classroom for the effective and sustainable learning. He states that "Unless classroom management issues are solved, the best teaching is wasted, thus making it possible the most important challenge facing beginning teachers". Classroom management is the challenge for teachers and they should learn from these challenges to make their class more beneficial. It is necessary to

apply effective instructional methods and methodologies and to make the lessons interesting. So, classroom management is one of the important aspects for teaching.

Theoretical Literature

There are so many theories which can be used to understand the problems in managing mathematics classroom. Here, the researcher is trying to include some ideas on managing mathematics teaching/learning classroom.

Jacob Kounin's (1977) "Discipline and Group Management in Classrooms" theory found the five implementations for managing effective classroom, which are given below:

Withitness. The teacher is responsible for inhibiting poor behavior. The teacher can maintain this strategy by making eye contact to all students at all times. The teacher should know each student on a personal basis (i.e. name, interests, strengths, weaknesses, etc.) The teacher can use other non-verbal techniques to show students that they are alert and care about the well-being of all students. The teacher should have communicated to all students the expectations and can have these displayed so everyone can be "with-it".

Overlapping. The teacher can have procedures that will allow the teacher to be effective when two situations occur at the same time. For example, if a student is done with an assessment or an assignment early have something for them to do such as moving on to another assignment, reading a book, or a quiet enrichment exercise. While the early-finishers are staying busy the teacher is allowed to move around the room to answer question or assist struggling students. Another example, if the teacher is in the middle of a lecture and a student enters the room the teacher should make eye contact with the

student, have an area for the student to turn in work, and continue with the lesson. Once the students are doing their work the teacher can go to the tardy student and tell them what they missed or answer any questions from the homework assigned the night before.

Momentum. Momentum must be at a consistent flow. Teachers should be able to make easy transitions from one activity to another. The teacher should make lectures short to allow students to group together and move around to gain more knowledge of the content. The teacher should make sure that these exercises remain short so students do not get bored. A teacher can keep a timer and assign roles to students to keep the students moving and on a time deadline. If students are struggling the teacher can reflect on what they can do to make the lesson more meaningful and easier to understand for their students.

Smoothness. The teacher can have students make hand gestures that will tell the teacher whether the student has a comment or question concerning the lesson. This technique allows the teacher to have an idea about those students who may cause an unwanted tangent and those who may have a good question, pertaining to utilised the time effectively. When placing students in group-work, the teacher can walk around facilitating and listening to discussions of other students. The teacher can then intervene or take the group to a different track if required.

Group focus. The teacher sets a direction and does not lose focus on their lesson. The teacher avoids going off topic. The teacher is able to transition the students from one activity to another without having too many disruptions. The teacher can implement this strategy with several techniques, which are encourage accountability make students

aware that they will be graded for their participation and contributions to the group and the students can facilitate a discussion. Once they have finished a task they can turn to each other or they could pair up with those who are already done and compare answers.

Kounin's theories are very useful in a Secondary School setting. The first two terms he uses, "Withitness" and "Overlapping," can be used for preventing the misbehavior of other students. When one student is about to throw a paper airplane or punch his friend in the shoulder, the teacher can make eye contact with him and shake his head. In Secondary School, however, it usually becomes more necessary to make an example of a student who willingly breaks a rule so that other students know they will share the same fate if they do so as well. Also, the "overlapping" ability to do more than one thing at once is essential, since most secondary school students will capitalize on the opportunity to get away with outlawed behavior while the teacher's back is turned. A final approach that seemed very effective was implementing lesson plans with high participation formats. When every student always has something to do, each will not become bored and find off-task behavior to engage in.

Conceptual Framework

Conceptual Framework helps to get the general understanding of the study and its depth. A conceptual understanding covers the main feature and their presumed relationship. This research study was based on the following conceptual framework:

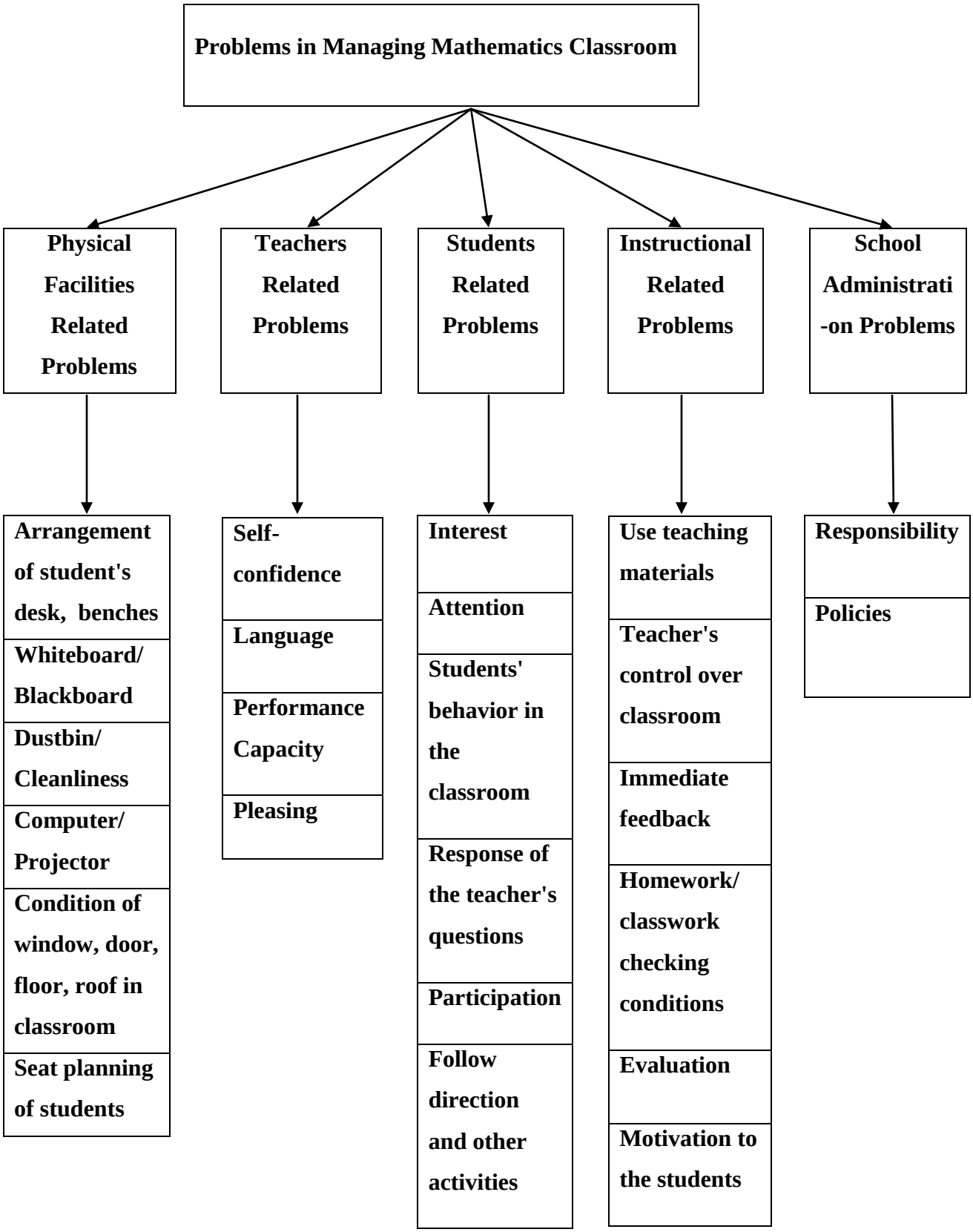

***Figure 1*: Conceptual Framework of the Study**

From the above conceptual framework, there are many problems like physical facilities management, teacher related problems, students related problems, instructional related problems, school administration related problems, interaction between student-student, interaction between student-teacher, assignment technique in classroom etc. in managing mathematics teaching/learning classroom. The researcher will collect the data from students by using questionnaire tool. Researcher will take interview with mathematics teachers and headmaster or member of the school administration by using interview guideline for qualitative data. The researcher was taken some ideas from Zurich model (2004) and Kounin's theory (1977) for effective classroom management. The availability of physical facilities and their condition in mathematics classroom was checked with the indicators of the Zurich model (2004). In the physical environment of the classroom, the researcher was studied about arrangement of the furniture, size of the white board, instructional teaching materials etc.

Chapter III

Methods and Procedure

The purpose of this chapter is to describe the research methods that the researcher was used during study.

Research Design

Research design is an overall plan and strategies to fulfill the goals of the purposed study. The design of this study was based on explanatory sequential design under mixed method.

Field of the Study

The area of this study was based on secondary level schools of Kanchanpur district. The field of this study was to find out the problems in managing mathematics classroom and seek out the ways of effective management of mathematical classroom.

Population and Sample of the Study

All the head teachers of secondary level school and entire mathematics teachers who teach mathematics in secondary level schools of Kanchanpur district in academic year (2018/2019 A. D.) was the population of this study.

Among them, researcher was selected eight secondary schools for the observation. The researcher was selected eight mathematics teachers from the sampled schools for the interview. Also the researcher was selected five head teachers from eight sampled school for interview by using (purposive) non-random judgmental sampling strategy. Researcher was selected 20 mathematics teachers purposively for questionnaire.

Data Collection Tools

Researcher was prepared a set of questionnaire form, observation form and interview guideline tools for collecting important data from the sampled school, students, mathematics teacher and head teacher of sampled school.

Observation form. The analysis of classroom observation was intended to cross check the students' activities, teachers' activities and methodology, teaching materials and related problems, interaction between students-students and students-teachers, physical facilities in the classroom while teaching/learning mathematics. The researcher was observed eight mathematics teaching/learning classrooms of each sampled school.

Questionnaire. Questionnaire was constructed after the detail study of related literature such as article, documents, thesis etc. Before preparing the questionnaire form, the researcher should consulted mathematics experts and mathematics teachers of the college. The statement of the questionnaire was constructed to find out the problems in mathematics teaching/learning classroom. 20 mathematics teachers were selected for the questionnaire. Questionnaire was developed having fifteen statements and area of the statements was related to the teachers' and students' activities in the mathematics classroom, proficiency of teacher, teaching style, Mathematical instruction, interaction between students-students and students-teachers, physical classroom management etc.

Interview guidelines. Interview guideline was used for qualitative information. Eight mathematics teachers and five head teachers from the sampled schools were selected for the interview. The interview was one of the major sources of data collection in this research. Researcher was constructed four interview guidelines for mathematics

teachers and four interview guidelines for the head teacher. The interview guidelines were related to those problems which are obtained from observation and questionnaire form. The researcher took interview of different mathematics teachers and head teacher of the sampled school especially focusing on the problems for excellent management of the mathematics teaching and learning classroom. The type of interview that was based in this research was individual interview.

Reliability and Validity of Instruments

The reliability and validity of tool were ensured by pilot study. For piloting the tools, they were validating through concerning the expert of the related field. For the reliability and validity of questionnaire, the researcher was conducted pilot test among five mathematics teachers of Kathmandu district. There was one set of questionnaire with rating scales for the given statements. Strongly agree, agree, undecided, disagree and strongly disagree with rating 5,4,3,2 and 1 respectively in each statements. Eighteen statements were used for pilot test. From the pilot study, those statements towards which all teachers had responded on the same scale were discarded and remaining statements were included in the questionnaire. This set of statements were set as questionnaire and distributed to the experts for checking the validity. Those statements in which the mean weightage is less than four and greater than one were accepted and other statements were rejected. After piloting, four statements were modified and the three statements were rejected.

Data Collection Procedures

After preparing data collection instrument and deciding the sample of the study the researcher was visited with the help of letter given by Department of Mathematics Education and inform to all sampled school administration, teachers and students about the purpose of the research. To fulfill the objective of the study, related data was collected by three different procedures which are class observation form, questionnaire and interview guidelines.

For the classroom observation, researcher was observed eight classes of each sampled teacher of selected school. In classroom observation, researcher was carefully recorded every notable activities of teaching/learning process and the condition of the classrooms and observed different aspect of classroom management with the help of the classroom observation form. After observing the classroom, researcher was selected 20 mathematics teachers purposively from different secondary schools of Kanchanpur district and distributed questionnaire to the sampled teachers and requested to fill up the questionnaire form. At the end, researcher was collected the questionnaire from them.

Then researcher was requested to the mathematics teachers and school administers/head master of each sampled school for the interview. The open ended questions were asked them with the help of interview guidelines that was developed by the researcher himself with the help of supervisor and experts of the related field. The researcher was asked various questions with the help of interview guideline to the school administration/head master and mathematics teachers which were related to find out the problems in the mathematics classroom, cause of problems in managing mathematics

classroom and seek out the ways of effective management of mathematical classroom. After collection data from interview, the researcher appreciated and thanked for the attentive support in data collection.

Data Analysis and Interpretation Procedures

Data analysis is the systematic process of presenting and showing its effect. The analysis of data is important things while we will prepare research report. The researcher was analyzed and interpreted the data by statistical test, table analysis of the tabulation of data which are collected by observation form. Firstly the collected data from observation form was categorized based on different tables developed by the help of conceptual understanding of the study and scoring procedure for the statement was Excellent =3, Good =2 and Poor =1. Mean Weightage>1.8 was considered to be good favor. Then the data was analyzed by percentage (%). It showed that the problems related to mathematics teaching/learning classroom. The researcher was presented the facts in different tables.

The collected data from primary sources by using interview with mathematics teacher and school administration/head master was analyzed and interpreted by using descriptive method.

Questionnaire was developed having fifteen statements related to the above variable for the teachers who were teaching mathematics at secondary level. Questionnaire was developed in Likert-Scale. Both positive and negative statements were included in the scale. Scoring of the statements is showing by the following table.

Table 3.1 ***Likert-Scale Point Used in Technique of Scoring***

S.N.	Meaning of Rating	Rating of Score	Negative Statements	Positive Statements
1.	Strongly Agree	5	1	5
2.	Agree	4	2	4
3.	Undecided	3	3	3
4.	Disagree	2	4	2
5.	Strongly Disagree	1	5	1

After scoring the statements, the obtained data will be analyzed and interpreted with the help of the following statistical techniques explanation methods.

- The average mean weightage was calculated as:

$$\text{Mean Weightage} = \frac{\text{Total rank score of a statement}}{\text{No. of students' responses}}$$

- Total score of five point Likert-Scale is 15, thus average score is three. If the calculated mean weightage is greater than or equal to three, then it was concluded that the statement was considered to be strong favor for the positive statement otherwise the statement is weak favor. If the mean weightage is less than or equal to three then it was concluded that the statement was considered in strong favor for the negative statement otherwise weak favor.

Chapter IV

Analysis and Interpretation of Data

This chapter deals with the analysis and interpretation of the data, which were collected through questionnaire, interview and observation form. This research study is related to problems in managing mathematics teaching/learning classrooms of secondary level schools.

Interpretation of the Data Obtained from the Classroom Observation

This section deals with the classroom observation of eight Mathematics classroom and teachers of secondary levels. Researcher was prepared an observation form and observed one classes of each sampled teacher. Altogether, researcher was observed eight classes. Researcher was tried to observe how the mathematics teacher managed the classroom while teaching mathematics. Researcher tried to analyze the activities used in classroom and problems faced by the teachers focusing on areas of physical resources management and teaching management.

After collecting data from different schools, researcher was tried to analyze them under different headings as follows:

Physical Facilities Related Problems

The researcher had used different types of data collecting tools in this study. Direct observation was done in the classroom. The classroom behavior of student and teacher was carefully observed and noted. From the research, it was found that mostly all the schools have their own buildings and rooms builds by the government. The buildings

of all schools were good, among them, Siddanath S. School, Sarswati S. School and Baijanath S. schools were very old and the condition of window, door and roof was not good. Available classroom space for per students from the observed classrooms is given below:

Table 4.1 ***Per Students Area in the classroom***

S.N.	Name of the school	No. of students	Per Students Area (sq.m.)	No. of the Benches/Desks
1.	Rauleshwar S. School	63	0.30	11
2.	Shree Baijanath S. School	71	0.35	18
3.	Shree Sarswati Janta S. S.	76	0.48	15
4.	Shree Ganesh S. School	54	0.80	27
5.	Shree Sarswati S. School	56	0.70	28
6.	Shree Tribhuvan S. School	52	0.65	18
7.	Shree Siddhanath S. School	58	0.40	17
8.	Shree Siddeswary S. School	73	0.36	18

The above table showed that the space of studied schools varied from 0.35 sq. m. to 0.80 sq. m. From the observation, Ganesh Secondary School, Sarswati Secondary School and Tribhuvan Secondary Schools have good arrangement of desks and benches in the classroom. According to the Zurich model, every student needs a 0.70 sq. meter space to be conveniently located in the bench. For the information about the condition of physical facilities, the researcher asked the question to the head teacher, which is: "What

is the condition of physical facilities and instructional materials in your school?" And the responses given by the head teachers are given below:

> The head teacher (T1) said that *"there are not sufficient teaching materials and other things. Classroom are congested, there is not enough way for the movement between two columns of benches".* Similarly, the head teacher (T2) said that *"our school has not adequate teaching materials. There are not well ventilated rooms. Desks and benches are not convenient enough for the students. Even teachers are not aware of using available teaching materials. Toilets are not much more comfortable. Because of congested classroom, moving from corner to corner is difficult".* Another head teacher (T3) said that *"the physical condition of our school is good. There are well managed classrooms with the perfect size of whiteboard. There are some instructional materials in our school. But due to the stress and timing of completing the course, mathematics teacher do not use instructional materials in the teaching process".* Head teacher (T4) said that *"the conditions of physical facilities are good but instruction al materials are out of date and the numbers of students is also increasing, so learning time by using instructional materials takes longer time."*

Therefore, we can say that the condition of the mathematics classroom was not satisfactory. The schools suffered from lots of problems. The classrooms of these schools are not spacious enough to manage the students properly. Educational materials are out of date and are not in use. Mathematics teachers have stress to complete course in time.

Physical facilities are the most important elements for successful classroom management. Physical facilities include various aspects like arrangement of benches/desks, shape of the classroom, blackboard/whiteboard, condition of the classroom window/door, students' seat planning etc. The researcher was found the following data from his sampled schools.

Table 4.2 ***Physical Facilities Related Problems***

S.N.	**Observed Items**	**Responses:**			**Mean Weightage**
		Excellent	**Good**	**Poor**	
1.	**Physical Facilities Related Problems**				
a.	Arrangement of student's desk and benches	1 (12.5%)	2 (25%)	5 (62.5%)	1.50
b.	Blackboard/Whiteboard	2 (25%)	1 (12.5%)	5 (62.5%)	1.63
c.	Dustbin/Cleanliness	-	-	8 (100%)	1.00
d.	Arrangement of computer/ projector in the classroom	-	-	8 (100%)	1.00
e.	Condition of window, door, floor, roof in classroom	-	5 (62.5%)	3 (37.5%)	1.60
f.	Seat planning of students	-	2 (25%)	6 (75%)	1.25

Arrangement of students' desks and benches. Systematic arrangement of students' benches desks helps the students to concentrate their mind on the subject matter and supports group discussion as well. According to table, here we can see that 12.5% were excellent, 25% classes were good whereas 62.5% were poor and the mean

weightage is 1.50. So it is problem in managing mathematics teaching/learning classroom.

Blackboard/whiteboard. Using blackboard is a must important for teaching in schools and colleges. The blackboard has many advantages both for the teachers and also the students. Using the board makes the subject more narrative, easy to teach for the tutor and also let the student understand better. According to Zurich model, the size of the whiteboards 44*36 inches are good size. From the above table, 25% schools have excellent whiteboards, one school has good whiteboard and 62.5% school have poor blackboard. The mean weightage is 1.6. So that, in the sampled schools, the size and space of the blackboard is problematic.

Dustbin/cleanliness. Dustbin is needed for clean and attractive classroom. But from the above table, we can see that no one school have dustbin. The mean weightage is 1. So that arrangement of the dustbin is the problem in managing mathematics teaching/learning classroom.

Arrangement of computer/projector in the classroom. Computer and projectors helps to the students for effective understanding to the problems. From the above table, the mean weightage of computer/projector is 1 and we can see that 100% were poor in the arrangement of the computer and projector. Hence the statement is problematic.

Condition of window, door, floor, roof of classroom. The above table shows that the condition of window, door, floor, roofs in classrooms were 62.5% good and

37.5% were poor and the mean weightage is 1.60, which is less than 1.80. So the condition of window, door, floor, roof etc. in the classroom is also the problem.

Seat planning of students. Use of the proper seating plans helps you as a teacher, to exert a level of control over the class. Seating plans are a quick and easy way to improve students' relationships with each other. From the table, the mean weightage of seat planning of students is 1.25. From the total sample schools, 25% of sampled schools were good and 75% were poor in seat planning of students in the classroom. So the seat planning of students is also the problem for effective management of the mathematics teaching/learning classroom.

Teachers Related Problems

Teachers play vital roles in the lives of the students in their classrooms. If the teacher prepares a warm, happy environment, students are more likely to be happy. An environment set by the teacher can be either positive or negative. If students sense the teacher is angry, students may react negatively to that and therefore learning can be impaired. The researcher asked the question to the mathematics teacher, which is: "What kind of teaching strategies do you follow for managing mathematics classroom?" This question mainly explored different strategies used in the classroom by the teachers. The responses given by the teachers are given below:

> T1 said that *"for the classroom management, i follow the techniques like, changing sitting style, putting the board in center and managing the light."* T2 said that *"I used the techniques like, use of materials, inductive method, group division and keeping the teaching materials in proper place."* T3 said that *"I*

always adopts techniques like group division, giving personal time and provide immediate feedback for making effective classroom. T4 said that *"student centered method, group work, learning by doing method, playing educational games with students were the techniques of classroom management".* T5 said that *"managing seats of students, making lesson plan, using teaching lesson plan and regular interaction were the techniques for classroom management".* T6 also had the similar concept with T5. He said that *"use of materials, lesson plan and regular interaction were the techniques for class-room management".* T7 mentions that *"i always use the techniques like use of motivation, talking individually with students, regular eye contact etc. are the main techniques of classroom management".* Similarly, T8 viewed was that *"placement of desks and benches, focus to all students, presenting lesson logically and fixing materials in proper places were the best techniques of classroom".*

The above points help us to summarize that the use of teaching materials, use of inductive methods, teaching the content from simple to complex, from known to unknown order, learning by doing method, division of the students if the number is high, managing the physical things, personal immediate feedback and motivation were some techniques adopted by the mathematics teachers to manage their classroom.

Each and every teacher is seeking to formulate his/her 'ideal classroom'. In order for a teacher to create such a perfect classroom environment, many factors have to be taken into consideration. What is the topic i am teaching? What is the level of my students? How will i manage my classroom? And we, as future teachers, should also ask ourselves questions as to how we will instruct and conduct our classrooms and how we

will make the best positive learning atmosphere for our students. The researcher observed the following aspect of the mathematics teacher in the classroom and found the important data which is presented as below:

Table no. 4.3 ***Teachers Related Problems***

S.N.	Observed Items	Responses:			Mean Weightage
		Excellent	Good	Poor	
2.	**Teacher Related Problems**				
a.	Self confidence	-	7 (87.5%)	1 (12.5%)	1.87
b.	Language	2 (25%)	4 (50%)	2 (25%)	2.00
c.	Performance capacity	-	2 (25%)	6 (75%)	1.25
d.	Pleasing	3 (37.5%)	3 (37.5%	2 (25%)	2.13

Self-confidence. Teachers' self-confidence is one of the best characteristics that can reliably predict students' learning outcomes. Teachers' beliefs in their teaching capabilities could affect how they perceive, approach and teach their students. From the observation, it was found that the mean weightage of the teacher's self-confidence is 1.87 and we can see that 87.5% teachers were good and 12.5% were poor in their self-confidence in the teaching classroom. All teachers have good qualification and all teachers have long-term teaching experience.

Language. Teacher language, what teacher say to students and how teacher say is one of the most powerful teaching tools. Through careful use of language, teacher can support students as they develop self-control, build their sense of community and gain academic skills and knowledge. From the above table, it was found that the mean weightage of the teacher's language is 2, which is greater than 1.80 and we can see that 25% teachers were excellent, 50% were good and 25% were poor

Performance capacity. From the above table, the observed data showed that the mean weightage of the teachers' performance capacity is 1.25 and we can see that 25% were good and 75% were poor. So performance capacity in the classroom is problem in managing effective classroom.

Pleasing. Teachers' pleasing behavior makes the students extrovert. From the observed classes, most of the teachers in the classes were experienced and energetic. Their pleasing behavior made the classes funny and more interactive and encourage to the student for learning. From the above table, the mean weightage of teachers pleasing in the classroom is 2.13 and we can see that 37.5% were excellent, 37.5% were good and only 25% were poor.

Students Related Problems

Teacher is the key elements of learning. Similarly, the students are the equally important factors for learning as well. To run the class properly, the behaviors of students should be observed or should be treated properly. How students behave in a classroom affects how much and how well they learn. Even one student acting out can interrupt all the students' learning. It's the teacher's job to manage the classroom in a manner that

reinforces learning. The collected information through checklist is presented below in which students' interest, attention, participation, followed the direction and other actions were observed:

Table 4.4 ***Students Related Problems***

S.N.	Observed Items	Responses:			Mean Weightage
		Excellent	Good	Poor	
3.	Students Related problems				
a.	Interest	-	4 (50%)	4 (50%)	1.50
b.	Attention	-	3 (37.7%)	5 (62.5%)	1.38
c.	Students' behavior in the classroom	-	3 (37.7%)	5 (62.5%)	1.38
d.	Response of the teacher's questions	-	1 (12.5%)	7 (87.5%)	1.13
e.	Participation in activities	-	3 (37.7%)	5 (62.5%)	1.38
f.	Follow direction and other activities		3 (37.7%)	5 (62.5%)	1.38

Interest. Students should be made actively involved in the class. For this, they should be participated in listening to the teacher and do activities so that the class could be automatically controlled. The above table showed that the mean weightage of the students' interest for learning is 1.38. The table shows that 50% students were good and 50% students were poor. Hence the students are not interested in teaching/learning mathematics in the classroom. So it is also the problem for effective management of the

classroom. The researcher asked question to the head teacher for collecting the major techniques policies for increasing students' interest toward mathematics, which is: "What are the major techniques and policies for increasing students' interest in learning mathematics? This question mainly explored different techniques and policies of the schools for effective mathematics teaching. The responses given by the head teachers are given below:

> The head teacher (T1) said that *"we have allocated 45 minute time every day for mathematics teaching. We have divided equal time to all subjects. We observed the class of the mathematics teacher regularly".* Another head teacher says that *"we have started semi-hostel and full hostel facilities at minimum cost for SEE appearing students from this year. Recently, we have managed one extra math teacher and started extra classes for grade ten."* Another head teacher (T3) said that *"here is provision for award for good performance of teachers and punishment for poor performance as well. Every month we observed the classrooms while teacher teaching their subject".* Head teacher (T4) said that *"due to the old teacher, mathematics teachers have time to arrange for various types of trainings. Additional classes have been arranged for poor students."*

After observing we found that school had allocated 45 minutes time per period. The school provided the extra class to support for learning mathematics. So the students are getting happy to pass the SEE exam. It was also concluded that, to attract teachers towards teaching, teachers need good facilities and rewards for good performance according to their subject.

Attention in the classroom. Mean weightage of the students' attention in the classroom is 1.38 and we can see that 37.5% students were good and 62.5% were poor. So that from the sampled school, the researcher was found that the students' attention in the classroom is the problem for effective management of the mathematics classroom. According to Kounin's theory of classroom management, the teacher should know each student on a personal basis (i.e. name, interests, strengths, weaknesses, etc.) The teacher can use other non-verbal techniques to show students that they are alert and care about the well-being of all students.

Students' behavior in the classroom. Students' good behavior in the classroom is must important for managing mathematics teaching/learning classroom. From the observed classes, the mean weightage of students' behaviors is 1.38 and we can see that 37.5% students were good and 62.5% were poor. None of the classes was found excellent. So the statement is problematic.

Response of the teacher's questions. Mean weightage of response of the teachers' questions is 1.13 and we can see that 12.5% students were good and 87.5% were poor. So Response of the teacher's questions is the problems for effective teaching/learning mathematics.

Participation in activities. Adequate participation of the students is required to manage classroom teaching properly. That is to say, the more students participate in learning process the more they learn. The above table showed the mean weightage is 1.38 and we can see that 37.5% students were good and 62.5% were poor. None of the classes was found excellent. So participation in activities is the problem in managing

mathematics teaching/learning classroom. According to Kounin's theory of classroom management, encourage accountability make students aware that they will be graded for their participation and contributions to the group and the students can facilitate a discussion. For the teaching /learning environment of the school, the researcher asked the question to the head teacher as: "How is the teaching and learning environment of your school?" The opinions obtained from head teachers' are given below:

> One of the sampled head master said that, *"we have many students in the classroom. Rooms are full so we can't give proper time to each student but the students are interested in learning and teachers are responsible to their job."* Another head master said that, *"it is very difficult to handle the students. We can't give especial focus to the poor students. Talented student ask in the classroom. Poor students sit in the middle and last bench but the teachers are trained and experienced.* Another head teacher said that, *"here in our school mathematics teachers are qualified, talented. So they can teach to the students very effectively but they did not give proper support to the students and give proper time."*

The above views of the head teacher indicated that, it is very difficult to handle the large numbers of students in the classroom. It is also found that teacher does no give must time to poor students.

Follow direction and other activities in the classroom. The class in which the students follow the teachers' direction in classroom activities is the identification of successive teaching management. From the above table the mean weightage of this statement is 1.38 and the researcher was found that 37.5% classes were good, 62.5% were

poor. None of the classes was found excellent. So it is also the problematic statement in managing better management of the mathematics teaching/learning classroom.

Instructional Related Problems

Classroom management enhances the students' learning. There is no doubt that classroom management is crucial aspects for learning. Without successful classroom environment, teaching and learning cannot be fruitful. The researcher asked the question to the mathematics teacher was: "How would you define the classroom management?" The responses given by the teachers are given below:

> T1 said that *"the classroom management is the process to manage the necessary elements in classroom like light, furniture black board / marker etc."* T2 viewed was that *"it is the way to manage useable and the need- based teaching materials and according to its subject matter, group, division of the students' cleanliness and attractive classroom"*. T3 said that *"the use of teaching materials in appropriate situation in the classroom is known as classroom management"*. T4 said that *"it is the way to create a situation where students can learn the content easily"*. T5 said that *"it is the process to manage the physical as well as the psychological aspect that teacher has to do"*. T6 viewed was that *"management is preparing of all kinds of things that appear into the class-room"*.T7 opinion was that *" classroom management refers to the wide variety of skills and techniques that teachers use to keep students organized, orderly, focused, attentive, on task, and academically productive during a class.* Similarly (T8) said that *"classroom management is the process by which teachers and*

schools create and maintain appropriate behavior of students in classroom settings."

From the obtained data, classroom management is defined as the methods and strategies an educator uses to maintain a classroom environment that is conducive to student success and learning. It is clear that classroom management is managing necessary elements in the classroom and making attractive conditions for teaching and learning. Classroom management is also helpful for the effective teaching and learning. The observation study is presented in the following table:

Table 4.5 ***Instructional Related Problems***

S.N.	**Observed Items**	**Responses:**			**Mean Weightage**
		Excellent	**Good**	**Poor**	
4.	**Instructional Related Problems**				
a.	Use of teaching materials	-	-	8 (100%)	1.00
b.	Teacher's control over the classroom	-	3 (37.5%)	5 (62.5%)	1.38
c.	Provision of immediate feedback	-	4 (50%)	4 (50%)	1.50
d.	Homework and class work practicing /checking conditions	1 (12.5%)	5 (62.5%)	2 (25%)	1.88
e.	Students' evaluation	1 (12.5%)	2 (25%)	5 (62.5%)	1.50
f.	Motivation to the students	2 (25%)	3 (37.5%)	3 (37.5%)	1.88

Use of teaching materials. Teaching materials are backbone of teaching learning process. In the absence of teaching materials, it is very hard to manage a classroom perfectly. The above table shows that the majority of the teachers i.e. 100% teachers were poor in using teaching materials in their classes and the mean weightage is 1.00. So it is a big problem for managing effective mathematics teaching/learning classroom. For this problem, one of the sampled head teacher replied as:

> Some head teachers said that *"due to the large number of students in the classroom, the use of instructional materials create a commotion environment. Teachers are unable to use computer and extra instructional materials during teaching and we don't have effective and attractive educational materials in our school".* Similarly samples head teachers said that *"Mathematics is developed by society and it is useful too. If the talent students are awarded by society then they can do better in future and poor are motivated by them and they can try to study more. Also if society helps to buy mathematical materials and other facility in the school then our mathematics teachers can easily use those materials in classroom too"*

Hence from the above opinion, in the development of mathematics society play a vital role. Mathematics is directly related to society the mathematical problems are included according to social needs. Thus mathematics learning is also related with society. People can help to reduce mathematical anxiety of students and prepare them to ready physically and mentally. Because of the large number of students in the classroom, the mathematics teacher does not feel easy to control the students. Teachers are not

trained to use instructional materials in the teaching classroom and there is no adequate basis for educational materials in the school.

Teachers' control over the classroom. Teachers play vital role in the lives of the students in their classrooms. If the teacher prepares a warm and happy environment and control their classroom, students are more likely to be happy and interested to be learning. In this observation, it was found that the mean weightage of this statement is 1.38 and also the above table showed that 37.5% classes were good and 62.5% were poor. And we can see that none of the classes was found excellent. So unable to control the classroom is the problem for effective management of the classroom. Therefore the researcher asked question to the mathematics teacher is that: "What kinds of problems do you have faced in managing mathematics teaching classroom?" This question tried to explore the problems that a teacher has to face in managing his/ her daily classroom practice. The problems faced during teaching by different mathematics teachers are given below:

> In response of this question, T1 said that, *"problems like lack of furniture, lack of proper teaching materials, light, ventilation and large classes were the problems in creating effective management in classroom practice."* T2 said that, *"tearing the paper, cheating the others' books, talking in the class, lack of instructional materials were the main problems that affect in creating effective classroom management"*. T3 said that, *"disruptive behaviors, weakness of school management system and lack of motivation, lack of physical facilities and untrained teachers were the main problems that hindered management."* T4 has the similar concept with T3. He further said that, *"lack of time, untrained teacher,*

were main problems for creating effective management." The opinion of T5 was, *"large number of the students, small classes and lack of teaching materials were the problems in managing mathematics teaching/learning classroom."* Similarly the T6 said that, *"lack of time s and guardian's comments etc. were the problems for classroom management."* T7 said that, *"lack of physical facilities, large number of students etc. were the problems that I faced during teaching."* Similarly T8 said that, *"students' level and interest, lack of economic availability, lack of rewards were the problems to create effective management."*

The above teachers' views cleared that the lack of teaching materials, lack of motivation of the students, lack of economic availability, lack of sufficient materials and student's level and interest, large numbers of the students in the classroom were the main problems that mathematics teachers faced during teaching.

Provision of immediate feedback. Effective feedback is necessary in teaching and learning process. According to Eggen and Kauchak (1994, p. 599) "feedback is information about current behavior that can be used to improve future performance and its role in improving learning is clear and well documented". So, the immediate feedback is essential in classroom. From the above table, we can see that the mean weightage of this statement is 1.50 and we can see that 50% were found good and 50% classes were found poor in providing immediate feedback to the students. None of the classes was found excellent. Thus, the result is problematic. According to Kounin's theory of classroom management, if the teacher provided immediate feedback to the students, then students are interested in learning process.

Homework and classwork practicing/checking conditions. The mean weightage of homework and classwork practicing /checking conditions of the sampled classes is 1.88 and we can see that 12.5% were excellent, 62.5% classes were good and 25% were found poor. Hence this statement is in strong favor.

Students' evaluation. Evaluation system is an important element for learning. Achievement whether the student has learnt the content or subject matter during the course of teaching is measured through the evaluation. Without evaluation, our learning may not be meaningful. So, this should be done by the teacher. From the observation form, it was found that the mean weightage of students' evaluation in the classroom is 1.50 and we can see that 62.5% classes were found poor, only 12.5% were excellent and 25% were found good. From the observation, it was found that many of the teachers did not evaluate their students.

Motivation to the students. It is most important aspect to manage classroom properly. It equally helps teachers to make the classroom effective and meaningful in terms of delivering teaching inputs to the students. It also helps students achieve the learning experiences taught in the classroom. According to the above table, we can see that 25% teachers were found excellent, 37.5% teachers were good, 37.5% teachers were found poor and the mean weightage is 1.88 in motivating their students in the classroom. So the statement is not problem in managing mathematics classroom. Thus, it can be concluded that most of the teachers were good for motivating students in the classroom. Hence the researcher requested to give the suggestions and techniques that could be useful for effective management of the mathematics classroom to the mathematics teacher. From the above request, teachers' suggestions and techniques are given below:

T1 suggested that, *"if the math teacher can't able to control his/her classroom, then it creates loud noise in the classroom. There is no ICT lab in our school. If it is available here in our school, then I would use it in teaching learning activities and certainly it would increase students' achievement in positive manner. Moreover there is no internet access in our school. If it is available, i would use it in learning activities for better achievement."* T2 suggested that, *"maximum use of teaching materials and provision of equal participation in the learning help for good management of classroom. So, teachers should be aware of using such techniques in the classroom."* T3 suggested that, *"teachers should adopt reward and punishment techniques. Classroom should be democratic. Teacher should be friend of the students."* T4 said that, *"the evaluation system was weak in government-aided schools. So, the evaluation system should be emphasized for better management of mathematics teaching/learning classroom."* T5 and T6 suggested that, *"techniques such as providing motivation, students centered teaching, teaching through simple to complex order and preparing daily lesson plans create the better learning environment. So, such special technique should be used by the teachers for improvised teaching".* Similarly T7 said that, *"the teachers should make immediate responses to their student and administration should manage the meaningful mathematical environment."* T8 suggested that, "*communication with the students, managing physical facilities like, desk, benches and boards, learning by doing method, child friendly teaching are helpful in managing classroom*

practices. So, such techniques should be considered while teaching in the classroom."

The above teachers' views cleared that the proper arrangement of the physical facilities and instructional materials in the school, arrangement of internet access and ICT lab, student center learning, immediate responses to their students' question etc. can make effective management of the mathematics teaching classroom. The mathematics teachers should be sincere to the role of classroom management. Teachers should be active, broad-minded and tricky to maintain discipline in the classroom.

Analysis of Data Collected from the Questionnaire Form

Effective teaching/learning mathematics is influenced by the teaching learning process. Teachers' qualification, interest of learners, expectation, views and beliefs toward mathematics are explained under the teaching learning process. Interest of learners is also an important determining factor in the mathematics classroom. If students do not have curiosity to learn, the teacher cannot teach. According to constructivism teachers and parents are a part of the learning to motivate the learners. Those students who can't solve the mathematical learning, they need to take help from their teachers, parents and peers. The data obtained from questionnaire form is presented as below:

Table 4.6 ***Analysis of Data Collected from the Questionnaire Form***

S. N.	Statements	Responses:					M. W.	Result
		SA	A	U	D	SD		
1.	There is no facility of internet access	11	6	-	1	2	1.85	S.F.

	and ICT lab in the school.							
2.	Arrangement of the physical facility in our school is good.	4	8	1	3	4	3.25	S.F.
3.	Board is good and enough space in mathematics classroom.	3	7	-	6	4	2.95	W.F.
4.	Computer, projector and teaching materials are available in mathematics classroom.	-	3	-	11	6	2.00	W.F.
5.	I always use teaching materials and lesson plan in the classroom teaching.	4	10	4	1	1	3.75	S.F.
6.	I always take class period on time and motivating the students.	6	14	-	-	-	4.30	S.F.
7.	There is social and cultural diversity among students in the classroom.	3	7	3	5	2	2.80	S.F.
8.	Age and gender difference are also the factors create problem in managing mathematics classroom.	-	4	3	8	5	3.70	W.F.
9.	All the students are laborious, interested in learning mathematics and disciplined.	-	6	-	8	6	2.30	W.F.
10.	It is very difficult to complete the whole course in time if taught by	7	9	3	1	-	4.10	S.F.

	using teaching materials.							
11.	There is no any training schedule to improve teaching learning activities in our school.	4	8	3	2	3	2.60	S.F.
12.	There is no any facilities and award for teachers' good performance.	4	12	3	1	-	2.05	S.F.
13.	The administration has provided me sufficient leisure period to construct and use instructional materials.	1	6	3	2	8	2.50	W.F.
14.	The policies, rules and regulations of my school are very strict.	6	13	1	-	-	4.25	S.F.
15.	Our school administration is irresponsible to manage necessary teaching materials.	8	7	3	-	2	2.05	S.F.

From the above table, the mean weightage of the first statement is 1.85, which is less than three and the statement is negative statement. Hence it indicated that sampled schools have no facilities of internet access and ICT lab in the school. It creates problems for teachers. Most of the sampled school does not have internet access and ICT lab so to find the reasons for absence the internet access and ICT lab, the researcher asked a question to the head teachers, which is: "Why the internet access and ICT labs are not available in most of the school?" The responses of the sampled head teachers are given below:

One of the respondent head teacher said, *"Most of the schools have poor economic conditions, lack of room, lack of information technology, lack of responsibility and the Government does not provide to teachers tanning about information technology."* Another head teacher said that, "*we don't have a trained teacher for ICT lab. The government has not helped any kind of management for ICT lab and due to the management of the internet, teachers in the school will be more likely to be involved in their own works therefore, it has not been arranged."*

The above views of head teacher indicate that there is a lack of economical sources in the school and the government cannot provide any economic support to school for the arrangement of trained teacher and ICT lab.

The mean weightage of second statement is 3.25, which is greater than three and indicated that this statement is in strong favor. It means the arrangement of physical facility in the sampled school is good. But from the observation, physical facilities are the main problems in managing mathematics teaching/learning classroom. Next, the mean weightage of the third statement is 2.95, which is less than three and the statement is positive statement. So the response of this statement is in weak favor. It indicated that the condition of board and space in the classroom is the problem in managing mathematics classroom. The mean weightage of the fourth statement is 2.00, which is less than three and the statement is positive. So the statement is in weak favor. Hence computer, projector and teaching materials are not available in mathematics classroom. In this regards, the head teachers responded as:

"We don't have any instructional materials and all the facilities of school depend on the economic status of the school but we are suffering from financial crisis. Our school has no additional source of income. In future, we are hoping to get financial support from NGOs or INGOs to buy and construct teaching materials as well as to manage required physical problems."

The above views of teacher indicate that there is a lack of economical sources in the school and therefore the school administration cannot provide any economic support to teacher for construction and purchase of teaching materials. The aim of school administration is to manage such problems with the help of some donors.

From the above table, it is seen that the mean weightage of the fifth statement is 3.75, which is greater than three and the statement is positive statement. So the statement is in strong favor. Hence we conclude that the mathematics teachers always use teaching materials and lesson plan in the classroom teaching. Next, the mean weightage of sixth statement is 4.30, which is greater than three and the statement is also positive statement. So the statement is in strong favor. Hence the mathematics teachers always take class period on time and motivating the students.

From the table no. 4.6, the mean weightage of the seventh statement is 2.80, which is also less than three and the statement is negative statement. It indicated that the statement is strongly agreed by the sampled teachers. Hence there is social and cultural diversity among students in managing the classroom. Similarly the mean weightage of the eighth statement is 3.70, which is greater than three and the statement is negative

statement and it indicated that the statement is in weak favor. Hence age and gender is not a problem in managing classroom.

From the table no. 4.6, the mean weightage of ninth statement is 2.30, which is also less than three and the statement is positive statement. So it indicated that the statement is in weak favor. Hence all the sampled students are not laborious, not interested in learning mathematics and undisciplined. Similarly the mean weightage of tenth statement is 4.10, which is greater than three and the statement is positive statement. Hence it is very difficult to complete the whole course in time if taught by using teaching materials in the classroom. Next, the mean weightage of the eleventh statement is 2.60, which is less than three and the statement is negative statement. So it indicated that the statement is in strong favor. Hence we conclude that there is no any training schedule to improve teaching learning activities in our school, which is the problem in managing mathematics classroom.

From the above table, it is seen that the mean weightage of the twelfth statement is 2.05, which is less than three and the statement is negative statement. So it indicated that there was no any facilities and award for teachers' good performance. Similarly the mean weightage of thirteenth statement is 2.50, which is also less than three and the statement is positive statement and it indicated that the statement is in weak favor. Hence we concluded that the school administration has not provided sufficient leisure periods for mathematics teachers to construct and use instructional materials. But the every teacher need a time to instructional materials for effective teaching.

From the above table, it is seen that the mean weightage of the fourteenth statement is 4.25, which is greater than three and the statement is positive statement. So it indicated that the statement is in strong favor. Hence we conclude that the policies, rules and regulations of the sampled teachers' schools are very strict. It is very good for both students and mathematics teacher. Similarly it is seen that the mean weightage of the fifteenth statement is 2.05, which is less than three and the statement is negative statement. So it indicated that the statement is in strong favor. Hence we found that the school administrations are irresponsible to manage necessary teaching materials in the classroom. Therefore it is a problem in managing mathematics teaching/learning classroom.

From the above discussion, it is concluded that there are many problems in managing mathematics teaching classroom which are physical facilities related problems, teacher related problems, students related problems, School administration related problems etc. School environment was not good. Students are not laborious. Instructional materials are not available in the school. Also social and cultural diversity create problem in managing mathematics teaching/learning classroom.

Chapter V

Summary, Findings, Conclusions and Recommendations

After analyzing and interpreting the collected data, it is necessary to draw the conclusion and reasonable inference. This chapter is basically concerned on the summary, findings and conclusions of the research on the topic "Problems in managing mathematics teaching/learning classroom".

Summary of the Study

The main purpose of the study was to identify the problems in managing mathematics teaching/learning classroom and seek out the ways of effective management of mathematical classroom. This study was explanatory sequential design under mixed method. This study was conducted in eight secondary schools of kanchanpur district. The population of this study consisted entire mathematics students, mathematics teachers and school head teacher of selected schools. The researcher developed the observation form, questionnaire and interview guidelines under the strong guidance of supervisor. Some of the collected data from class observation and questionnaire were quantified on the basis of three and five points Likert-Scale and analyzed on the basis of statistical indicator and mean weightage and the data collected from interview were analyzed and interpreted by using descriptive method.

Findings of the Study

On the basis of the rigorous analysis and interpretation of the data, the following findings are extracted:

- There were not appropriate arrangement of furniture particularly for proper seating, group discussion and conducting other activities.
- There was big size classroom but students were sitting tightly. No of boys were more than girls. Benches and desk were not suitable for different level of students. Teacher was focusing only talented students who are sitting in front of the classroom.
- Teaching materials were not found in the classrooms and school as well.
- Lots of the classes were disturbed by the sound of next class and also of vehicles on the road beside the school.
- All the sampled schools have not ICT lab and internet access.
- Use of inductive methods, teaching the content from simple to complex, from known to unknown order, division of the students if the number is high, managing the physical things, personal immediate feedback and motivation were some techniques adopted by the government-aided mathematics teachers to manage their class.
- Students were not laborious, interesting in learning and disciplined. But the mathematics teachers are high educated, qualified and teaching experience is strong.
- There was social and cultural diversity in the classroom. But there was not age and gender diversity in the classroom.
- The rules and the regulations of the sampled school were strict.
- In most of the classes of sample schools, very less number of students was participate in teaching/learning process.

Conclusions of the Study

From the above stated findings of this study, it can be concluded that management and teaching learning activities in mathematics classroom were not satisfactory in Kanchanpur district because the teachers in Kanchanpur district are facing a large number of problems due to construction and purchase of teaching materials, selection of teaching materials, use of teaching materials and method, skill, unable to control the classroom and finally due to weak school administration. More interestingly, it is found that the large number of students in the classroom create problem in proper arrangement of the mathematics classroom. Necessary teaching materials are not available and teachers were not using available teaching materials too so it also create problem to control the classroom because of the bored teaching process. But mathematics teachers always helped and provided guidance to their students in classroom practicing and treat equally to all the students in the learning process. Teacher should eye contact with every student in the classroom but it did not found there. Teacher had given sufficient homework and class work but they were not checking proper due to the lack of time. Lack of proper teaching materials and methods, unavailability of math lab and ICT lab, lack of ICT training for the teachers, lack of implementation of training skills in real classroom teaching, weak school administration are burning problems faced by mathematics teachers of secondary level in Kanchanpur district. The physical facilities of the schools seemed poor or that were not satisfactory. But mathematics is a gateway to many areas of further study.

In a conclusion of the study, mainly school environment, physical facilities, teaching and learning process, self-interest, instructional materials, untrained teacher,

school administration etc. are the problems in managing effective mathematics teaching/learning classroom.

Recommendations of the Study

On the basis of above findings and conclusions, the following recommendations are made:

- School administration as well as teacher should manage proper arrangement of the furniture and seat planning of the students in the classroom.
- Mathematics teachers should make lesson module of each and every chapter before teaching.
- Use softer voice so students really have to listen to what the teacher saying.
- Mathematics teacher must show the confidence in teaching classroom.
- When discipline problems occur, the mathematics teacher consistently takes action to suppress the misbehavior of exactly those students who instigated the problem.
- Formalized statements that provide students with general guidelines for the types of behaviors that are required and the types that are prohibited.
- The head teacher of the school and the school management committee should create appropriate educational environment in the school.
- Government of Nepal should supply the essential and necessary teaching materials as well as should encourage the school administration to purchase and manage such teaching materials.
- Motivational orientation program should be conducted.

- Teachers should be honest to their job and responsible for the academic progress of each and every student.
- Mathematics classroom should be fulfilled by graph board and bulletin board.
- The mathematics teacher should have the ability to control the classroom should take eye contact with the students.
- Schools need to establish mathematics lab and ICT lab.
- Teachers are required to find out the causes of students' problem and treat them positively.
- Positive encouragement, feedback, personal meeting are needed to treat disruptive students.
- Frequent short time training as well as ICT training should be organized for teachers for their better professional development.

Recommendation for Further Study

The researcher has made following recommendation for further study:

- This research study will helpful for managing proper mathematics classroom.
- The researcher will provide valuable secondary sources for the mathematics teachers and students both.
- Similar research can be carried out with large sample and various schools of different parts of Nepal.
- The study should be extended to the higher level such as: +2, Bachelor, Master relating on the same aspect.

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APPENDIX – A

Classroom Observation Form

Name of the School: Date:

Name of the Teacher: Gender: Male ( ) Female ( )

Class: Topic:

Period: Total Number of Students:

S.N.	Observed Items	Responses:			Mean Weightage
		Excellent	Good	Poor	
1.	**Physical Facilities Related**				
a.	Arrangement of student's desk and benches				
b.	Blackboard/Whiteboard				
c.	Dustbin/Cleanliness				
d.	Computer/Projector				
e.	Condition of window, door, floor, roof in classroom				
f.	Seat planning of students				
2.	**Teachers Related**				
a.	Self confidence				

b.	Language				
c.	Performance capacity				
d.	Pleasing				
3.	**Students Related**				
a.	Interest				
b.	Attention				
c.	Asking relative questions				
d.	Response of the teacher's questions				
e.	Participation in activities				
f.	Follow direction and other activities				
4.	**Instructional Related**				
a.	Use of teaching materials				
b.	Teacher's control over the classroom				
c.	Provision of immediate feedback				
d.	Homework and class work practicing /checking conditions				
e.	Motivation to the students				

f.	Students evaluation				

……..

School Principal

APPENDIX - B

Questionnaire for Mathematics Teachers

Respected sir,

I am a master's degree student of Mathematics Education, Central Department of Education, Kirtipur, Kathmandu. I am writing a thesis entitled on "Problems in Managing Mathematics Teaching/Learning Classroom" as the partial fulfillment of my degree graduation. So to complete this thesis, i have prepared some statements for you. This is a humble request to you to read each of the statements described in the questionnaire carefully and express honestly your opinion by putting tick marks (√) at the appropriate space where: SA = Strongly Agree, A = Agree, U = Undecided, D=Disagree and SD = Strongly Disagree.

Name of the School: Date:

Name of the teacher: Teaching experience:

S. N.	Statements	Responses:					M. W.
		SA	A	U	D	SD	
1.	There is no facility of internet access and ICT lab in the school.						
2.	Arrangement of the physical facility in our school is good.						
3.	Board is good and enough space in mathematics classroom.						
4.	Computer, projector and teaching materials are available in mathematics classroom.						

5.	I always use teaching materials and daily lesson plan.						
6.	I always take class period on time.						
7.	There is social and cultural diversity among students in the classroom.						
8.	Age and gender difference are also the factors create problem in managing mathematics classroom.						
9.	All the students are laborious, interested in learning mathematics and disciplined.						
10.	It is very difficult to complete the whole course in time if taught by using teaching materials.						
11.	There is no any training schedule to improve teaching learning activities in our school.						
12.	There is no any facilities and award for teachers' good performance.						
13.	The administration has provided me sufficient leisure period to construct and use instructional materials.						
14.	Our school administration is irresponsible to manage necessary teaching materials.						
15.	The policies and regulations of my school are very strict.						

Any other problems: ……..

……Thank you.

APPENDIX – C

Interview Guidelines for Mathematics Teacher

Name of the School: Date:

Name of the Teacher: Sex:

Qualification: Teaching Experience:

Age:

The interview with Mathematics teacher would be taken on the following main topics.

- Opinions toward classroom management.
- Teaching strategies for teaching mathematics.
- Problems faced by the teacher in teaching mathematics.
- Suggestions and techniques that could be useful for managing effective mathematics classroom.

APPENDIX -D

Interview Guidelines for Head Teacher

Name of the School: Date:

Name of the Head Teacher: Sex:

Qualification: Teaching Experience:

Age:

The interview with head teacher was conducted on the basis of following topics:

- Opinions towards mathematics learning in classroom.
- Teaching and learning environment.
- Condition of physical facilities and instructional materials in the school.
- Major techniques and policies for effective mathematics teaching.