

CHAPTER-I

INTR ODUCTION

1.1. Background of the study

Mathematics is the central part of the school curriculum in Nepal and the other countries of the world. Every society has observed mathematics as basic needs of human civilization. Mathematics has started at the infancy level from the beginning of human civilization to the advanced level at twenty-first century. New discoveries in mathematics and mathematics education are still in the continuation.

From the earliest days, mathematics has occupied an important place in the history of development of mankind. It has played a decisive role in building- up our civilization. Mathematics is valuable to humanity in many ways. It can be said that mathematics helps to develop the power of thinking and reasoning. It provides mental exercise best fitted for sharpening and strengthening the faculties of the brain. The logic used in mathematics employed is exact and accurate. Mathematics hasn't only been useful in its own right but it has also enriched the world by helping to develop other fields of knowledge. So, National Education System Plan (NESP, 2028) has implemented to make school mathematics more practical and fruitful for students and since then mathematics has been given a significant place at all levels of school curriculum.

Formal education takes place from school. School is a miniature society. School society is an organization of pupils and all organizations need to be managed. Management is essence of all organized efforts. Therefore, to achieve the educational goals, management should be properly done and cannot be separated from education. Education and management together form as educational management. Encyclopedia of education

research (2001) states; "Educational management is the adjustment in the presence of educational worker and process of utilizing the required materials to develop the human manner." In this connection different writers define "Educational management includes way of managing personal, organization of physical facilities and development policy to conduct the teaching learning process." Willes (1996) states, "Educational management is assistance in the development of a better teaching learning situation." Agrawal (2002) defines educational management as "The management process in education system consists of achieving the goals by getting the jobs done through people in the context of changing environment."

The focus of education programmed should be the learner. So it is very important that education program should run according to the needs and interests of the learners. Teaching learning process takes place in the classroom. For the effective teaching and learning process, classroom should be managed properly. Classroom management is one of the aspects of educational management. It helps the teachers to understand the sources and causes of problems existing in the classroom. An improvement on classroom management helps to achieve the goals of education caution.

Mathematics classroom management refers to the operation and control of classroom activities related with teaching and learning mathematics. It is relatively confined to the more mathematical aspects of teaching learning activities. Most of the discussion of classroom management assumes that its main purpose is to save time and energy. Some of the things, a teacher should consider in planning classroom management are regulation on seating and attendance, the handling of instructional material, equipment and the control of the unnecessary activities during the class period.

All organizations need to be managed. Management is the essence of all organized efforts. It performs the functions of planning, organizing, staffing, directing and controlling. It makes things happen through implementation in a changing environment. The concept of management has been changing. The various definitions indicate different meaning and scope of management. George R. Terry states "Management is a process of consisting of planning, organizing, actuating and controlling performed to determine and accomplish the objectives by the use of people and resource."

A well managed classroom will give more opportunities for mental growth and development of student. Good classroom management produces favorable marking conditions, conducive to the effective learning and makes their work enjoyable and interesting. The teacher, in the real scene of the world, is the custodian of learning opportunities of the students. Progressive education is concerned with providing the facilities for every pupil that encourage learning and opens the avenue for it. The school is looked as the agency of society to provide these opportunities. A well-managed mathematics classroom also makes the students to appreciate the value of time upon which his/her future success depends. Thus, effective teaching and learning is possible only in a well managed mathematics classroom.

There are different aspects of classroom management such as organization, communication, monitoring, and delivery of instruction (Allyn and Bacon 2001). Furthermore, classroom management can be studied on four aspects as physical resources, discipline, administrative details and classroom practice. In this context the researcher would be curious about the mathematics classroom of physical resources management and discipline management of secondary level of public schools of Kaski District particularly. Physical aspects are concerned with the environment and

surrounding of the students classroom and disciplinary aspects are directly related with the students' behaviour.

Unicef (2060) states that the weak aspects of physical management of school may cause the worse learning to students and appear the disciplinary problems. Therefore school should be physically equipped and managed for the need of qualitative education. Further it states that physical classroom management is essential for the effective learning and for the development of learning capacity.

A well planned classroom space can also facilitate the management of student behaviour. Like other aspects of classroom management, this often depends on the organizational performance of the teacher.

Z. Hanson (1996) states "Classroom management is dependent upon several independent components such as:

- i. Engaging curriculum
- ii. Working with anger, projection and depression
- iii. Student as responsible citizens
- iv. The teacher as a self knowing model
- v. Classroom management skills
- vi. Working with resistance, conflict and stress
- vii. Robust instruction.

Classroom management is very important to effective teaching learning process. Proper classroom management makes easy to achieve the goals of education. Teaching learning process takes place inside classroom and it is the place of acquiring knowledge for students so the environment of classroom must be inviting, exciting and safe place to learn. Mathematics is one of the important subjects in the school curriculum. Therefore, to achieve

the determined objectives of mathematics, classroom should be properly managed.

Insufficient physical resources and improper management generate the disciplinary problems in students. Insufficient physical facility denotes the lack of desk, bench, inappropriate size of blackboard, very small/very large size of classrooms, leaking roof of class, lack of teaching materials. If there is lack of desk-bench in classroom then students move around the classroom to search a seat, they make classroom noisy and such activity denotes the disciplinary problems. So physical and discipline problems are related to each other. Due to this relation the researcher has selected these two aspects of classroom management for the study.

The term discipline in education has been assigned a greater variety of meaning. In its broadest meaning, the term discipline has been used in education to denote the development and the training of the physical and moral capacities of the child through exercise and instruction. Thus discipline is comprehensive as education and helps on mental, physical and moral training with entire development of the individual. Discipline, in this broad sense is also a factor in the development of character. It includes the rules regulation and guidance of the factors that contribute to the acquisition of character. Discipline must be as inherent in all types of learners not for the slow or retarded only, but for the bright as well so the development of discipline is considered as one of the aim of education.

"Discipline is something teacher does for children, not for teacher "(Dsouza, 1997) classroom discipline is about guiding children to change their behaviour. Students need to know their responsibilities to develop orderly learning environment. The students require a discipline plan which will guide them not only in class but also in their day to day life. They need canalizing and direction. Teaching is complex enterprise (Showman and

Biehler, 2003). If the class is not properly managed the teaching can get chaotic with students suffering from boredom, confusion, restlessness and perhaps even disruptiveness. There must be a fair amount of autonomy, physical movement and social interaction between students and teachers (Showman and Biehler, 2003).

The various theories like the Neo-Alerian theory, democratic Theory, cognitive theory state different reasons for the disruptive behaviour of students. Some of them are lack of parents' guidance, family background and peer pressure, low self-esteem and confidence, weak interpersonal skill and non-assertive teacher (Porter, 2000). It is important to have an effective classroom management plan with discipline as integral and important part of it (Abino, 2005). A good discipline in a classroom is a challenging task. In the sense of discipline there are mainly two thought, one is teacher's control over classroom and another is student autonomy. There are some views whether to support first one or the second let's consider some quotations (Tayler, 1987) "Teacher don't generally want to give control to their students. Control of the students by teacher tends to be regarded as the good classroom discipline.

Good classroom management is a skill that teachers acquire over time. The teachers don't feel that it takes one specific way of managing the classroom to have control, but actually quite a few different techniques that a teacher moulds into his/her own unique style. One of the most important factors related to good classroom management is a solid understanding of classroom management theory as well as an understanding of student's personal and psychological needs. This helps the teacher to understand why problems exist in the classroom and between themselves and the students. When a teacher has this understanding he/she can use what they already know about the problem to try and solve it, if that doesn't work he/she can

then turn to a colleague who might have learned another method of solving a particular problem to help out. Another factor is that the good classroom management is establishing positive relationship between teacher and students that create classrooms as communities for support. This helps students to feel that teachers are really here to help them and meet their own basic personal and psychological needs. The need for good classroom management involves in instructional methods that facilitate clear classroom organization and optimal learning by responding to the academic needs of the individual students and the classroom as a whole. This feeling will help the students with low motivation and negative-self attitude by giving them structure, organization, and the support that they need in their lives. Fairness and structure combined with clear expectations and clear lesson in a caring and non-threatening environment. These are the key elements to maintaining good classroom management.(posted by Kim Zurich, 2004)

Zurich (2004) research report has shown that the primary mathematics classroom must have at least the following requirements.

- i. Furniture
- ii. Centers
- iii. Instructional materials (student's, daily use materials)
- iv. Teaching resources (teaching materials)
- v. Students work
- vi. Students involvement

A well-managed classroom unit gives the pupils good classroom management produces favorable working conditions conducive to good learning opportunities of the pupils progressive education is concerned with providing every pupils with the facilities that encourage learning and opens the avenue for it. The school is looked upon as the agency of society to provide these opportunities. A well managed classroom also makes the pupils appreciate the volume of the time upon which its future success depends. Thus, effective, teaching and learning are possible only in a well managed classroom.

A well managed classroom can either be maintained with the help of rod and harsh measure or it may cause because of students willingness to cooperate with the teachers abiding by the standards laid down by them. Therefore the discipline of child should be comprehended and its importance from the primary and secondary level of the school and onwards should be realized.

According to S. Posamentaler and J. Stepelman (1997), following activities denote the discipline problems.

- i. Getting out of seat and walking around during the lesson.
- ii. Leaving the room without permission.
- iii. Excessive talking to neighbors.
- iv. Calling out answers in spite of the teachers request not to do so.
- v. Not doing his homework.
- vi. Coming to class unprepared - no text, no notebook, etc.
- vii. Cheating on a test.
- viii. Using improper language in class.
- ix. Often arriving late to class.

- x. Chewing and cracking gum.
- xi. Tossing paper across the room.
- xii. Throwing paper on the floor.
- xiii. Doing work for another subject in mathematics class.
- xiv. Laughing aloud, wisecracking frightening with other pupils.
- xv. Excessive absence.
- xvi. Reading newspaper in class.
- xvii. Looking out from the window.
- xviii. Speaking to another pupil across the room.
- xix. Threatening the teacher verbally or physically.

Hence there is a great effect of physical resources and discipline in student's achievement. Sufficient physical facilities and good discipline enhance the students learning in mathematics. These two aspects management of physical facilities and discipline are more responsible for the dropout and failure of students. In this situation, the researcher likes to explore the effect of physical resources and discipline in mathematics classroom to promote learning.

1.2. Statement of the Problem

The study is mainly concerned with the mathematics classroom management. It is very important to facilitate children's learning. The major question of research in a broadest sense is what is the impact of physical and disciplinary problems in mathematics learning? Furthermore this study aims to answer the following research questions.

- i. What is the existing situation of physical resources in mathematics classroom of secondary level in Kaski District?
- ii. What are the problems of physical resources in mathematics classroom?
- iii. What sort of disciplinary problems are seen in mathematics classroom?
- iv. What is the effect of classroom management in the achievement of students?

1.3. Objective of the study

This study was designed specially to fulfill the following objectives.

- i. To find the problem of mathematics classroom management and its effect on students achievement.
- ii. To identify the physical problem of mathematics classroom management.
- iii. To identify the disciplinary problem of mathematics classroom management.

1.4. Significance of the Study

Educational management is important for the development of human relations and for the effective product of education, (Encyclopedia, 1977). Successful classroom management involves not only responding effectively when problems occur, but preventing the frequent occurrence of problems. Good classroom management makes easy to understand the student's personal and psychological needs and optimize the teacher student's relationship. Furthermore this study has the following significance.

- i. This study would provide the information about existing situation of physical resources in mathematics classroom.
- ii. The study would help to organize and manage the physical and disciplinary problems of mathematics classroom management.
- iii. The result would help to find the effect in mathematics achievement of students from management of mathematics classroom.
- iv. The study would be helpful for the schools, principals, teachers, students and related fields.
- v. It would help to aware about the mathematics classroom management for the government to improve student's achievement.

1.5. Limitations of the Study

The study has the following limitations.

-) The study is focused on the physical facilities and disciplinary problems in mathematics classroom management.
-) The study was conducted in Kaski District.
-) The study included the teacher and students of grade IX of eight public schools of Kaski District

1.6. Definition of related terms

-) **Physical Resources:-** Physical resource denotes the physical facilities such as furniture, desk, bench, school building, blackboards, classroom size, instructional materials etc.
-) **Achievement:-** Mathematics score of the students in public school at grade IX.

-) **Public School:-** Those schools which are conducted by government or local community.
-) **Classroom Management:-** Classroom management is the process of managing the physical resources and classroom discipline.
-) **Classroom Discipline:-** The practice of training people to obey rules, order and punishing them if they do not follow is called discipline. Classroom discipline includes learning times, student's involvement, assignment collections, lesson plan, focus on students needs creating a safe and positive environment, student's classroom behaviour, organizing materials using classroom rules and procedure.
-) **Disciplinary problem:-** The problem which is related to discipline is called disciplinary problem. Being late for school, misbehaving with friends, talking with each other during class, not doing homework and class work, entering and outing classroom without permission etc are the examples of disciplinary problems.
-) **Physical Problem:-** Physical problem is related with physical things. Lack of drinking water, toilet, playground, furniture, classroom size etc. creates the physical problems.

CHAPTER - II

REVIEW OF THE RELATED LITERATURE

This chapter deals on the review of the related literature to this study and a framework for the study. Theoretical literature for understanding the classroom management, some related studies about classroom management and disciplinary problems were reviewed. The theoretical literature of the requirements for classroom management describes the recognition framework and a list for understanding the classroom management. The literature included the different research findings of the classroom management and disciplinary problems.

Few number of research studies relating to the classroom management of mathematics are found in Nepal. Reviews of some related literature in classroom management are as follows:

Education and Development (1979) draw some issues in the field of resource management. It says school management and classroom teaching are two important aspects for qualitative improvement in institutional education. For this head masters play significant role in the schools as they can direct their administration towards improvement of quality and provide the right leadership for instructional improvement in their schools. Proper attention must be paid to the availability of physical facility at school. Plans must be prepared for the construction and maintenance of necessary physical facilities. Such as administrative rooms, library, hostel etc. The interest and the opinion of the people in the planning stage of physical facilities for the school must be duly respected and head teachers must personally supervise and make provision for the maintenance of all the rooms and premises of the school and should keep them in good shape.

Amataya (1978) did a research entitled "A study of the effectiveness of teaching mathematics with and without the use of instructional materials." The researcher concluded that the performance of students taught by the use of instructional materials was significantly better than the performance of the students taught without the use of instructional materials.

Karmacharya (2001) did his M.Phil on topic "Democracy in classroom practice in the primary school of Nepal". This study is related to the way of life of children in the classroom. He adopted the critical hermeneutic tradition phenomenological and symbolic interaction to draw intense from the data collected through interviews and observation from schools of Kathmandu and Kavre. His findings are given priority to process in classroom practices and consequently the teachers treat the children as objects authoritatively. Teachers still have very rigid view of learning which has led them to be a powerful autocratic leader rather than democratic facilitator in the class. The relationship between teacher and students is like a governor and governed. Children have difficulty to like the lessons and activities with their everyday lives due to pedagogical legitimization and domination. That is governance through fear and punishment in classroom. The uncivilized discipline may not suit to the multicultural crowd and impart of hidden curriculum on the life in classroom needs to be taken into consideration for promoting democracy in classroom practice.

Karki (2001) did his M. Phil by thesis "A study on classroom practices in the primary schools of Nepal in relation to the environmental education." He tried to explore the factors that influenced classroom practices and ways to improve them. Data were collected through interviews with subject teachers, observation of classroom practice in selected schools and document analysis. It was found that the classroom practice were influenced by various factors related to teachers professional skills,

academic background, training, educational policies and content and activities given in the textbook. This study concluded the environment educational classroom practices in grade five of selected public school were not concluded satisfactory due to lack of motivation and efficient teachers, availability or required resolves and effective educational practices.

Educational Management Report (2005) draws some issues in the field of resource management. It said that school management and classroom teaching are two important aspects for qualitative improvement in institutional education. In this respect, head teacher plays as the role in the schools is that they can direct their administration towards improvement of quality and provided the right leadership for instructional improvement in their schools. Proper attention must be paid to the availability of physical facility at school. Plans must be prepared for the construction and maintenance of necessary physical facilities. Like the administrative rooms, latrines, library, hostel etc. In Plans of this kind, efforts must be made to enlist public co-operation committee. The interest and the opinion of the people in the planning stage of physical facilities for the school must be duly respected and head teachers must personally supervise and make provision for the maintenance of all the rooms and premises of the school and of keeping them in good space.

Basnet (2003) conducted his thesis entitled "Teaching problems faced by the mathematics teachers in existing curriculum of grade eight." He concluded that the mathematics teaching and learning is not satisfactory at grade eight in Jhapa district. The teachers and students are facing many problems due to the lack of classroom discipline, inadequacy of textbook, lack of instructional materials, lack of physical facilities, large class size and so on.

Dhital (1985) conducted his thesis entitled "A study of the problems facing the teaching of English at lower secondary level of Dhankuta district. He concluded that there were number of problems in activities, teachers training instructional material classroom situation and physical facilities etc.

From the above selection of related literature, it was found that most of the schools within the nation were facing the problems of resource management especially for the physical facilities management, human resources and financial management. These studies had been done in general classroom but not in special maths class and the study about classroom management has not been done in the context of school level.

CHAPTER-III

METHODOLOGY

The methodology of the research study includes the following points and their explanation.

3.1. Design of the study

This is a qualitative research which is descriptive in nature.

3.2. Population of the study

Kaski district was the field of data collection. All public secondary schools of Kaski district and the mathematics teachers and students of concerned school were the population of this study. Among 211 schools there are only 92 public secondary schools in kaski district.(www.deokaski.gov.np)

3.3. Sample of the study

The purposive sampling is used to find out sample schools. The researcher select four physically well managed schools and four not physically well managed schools as sample. The sample schools were categorized into four groups (well physical and well disciplined, well physical but not disciplined, not well physical but disciplined and not well physical and not disciplined). A mathematics teacher and four students from each eight different selected schools under kaski district were selected as the sample of this study. In total thirty two students and eight mathematics teachers of eight public schools are included in the sample. For this purpose researcher consulted with head teacher, mathematics teacher, students and parents.

The following were the sample schools for this study;

- i. Shivashakti secondary school, Fulbari, Pokhara

- ii. Navin higher secondary school, Gairapatan, Pokhara
- iii. Dudhpokhari secondary school, Taprang
- iv. Kalika secondary school, Kahu
- v. Ratanpande secondary school, Arva
- vi. Dhanubaskalika secondary school, Chhahachowk
- vii. Maharudra secondary school, Sodha
- viii. Arvavijaya secondary school, Dhandbesi

3.4. Instruments

For the purpose of this study the main tools were observation form, questionnaire and direct oral interview for the data collection of this study.

3.4.1 Observation (Checklist)

The checklist was used to collect the data for existing situation of physical resources management in mathematics classrooms. This tool was prepared on the basis of Zurch's model of physical management of classroom. Also the researcher did the participant observation to identify the disciplinary problems. The checklist is given in appendix- A

3.4.2. Questionnaire

Questionnaires were distributed for the mathematics teacher and selected students of sampled schools. Questionnaires were used to find out the physical resource problem, disciplinary problem and mathematics teacher dealing on them. This tool was developed on the basis of the problem shown by BPEP (2002) and CERID (2002) and problems shown by related literature. The questionnaire is given in appendix- B

3.4.3. Interview schedule

Unstructured interview was taken from students to find the impact of teacher's way of dealing and disciplinary problems. The format of the interview schedule is given in appendix- C

3.5. Data collection procedure

Using classroom observation form, the researcher observed the mathematics classes of selected secondary schools. The researcher himself attained in each mathematics class and recorded the information in his check list about the availability of physical facility. This observation was done in the mathematics classes of each selected school. Participatory observation was done to collect the information about disciplinary problems. The researcher had attained in mathematics teaching hour in the selected school. Researcher has noted the students' discipline violence activities in his personal diary. In the same period the researcher also noted teacher's way of punishment for the students' discipline violence activities. The observation was carried in mathematics teaching class over the whole period.

The questionnaire was distributed to the selected students and a mathematics teacher from each school. Closed questionnaire was used for the students and mixed questionnaire was used for the teacher. From these tools, the data related to facing problems of physical facility and appearing disciplinary problem were collected. The researcher had recorded their response on the same questionnaire.

The researcher requested the principal to conduct the interview for students by saying the purpose of the study. All the selected students were introduced about the objective of study. The students were encouraged to response to the researcher without any hesitation and the respondents were combined that the researcher would not convey their responses to their

teacher. The interview schedule was unstructured. From interview schedule, the researcher had asked some questions in groups and some questions individually to the selected students. From this interview schedule the researcher collected the information about the causes of getting punishment, appearing disciplinary problems in classrooms, students' expectation of punishment, discipline violence activities in students' sense, effects of discipline problems in mathematics learning. Also the researcher brought the students' mathematics achievement score to find the impact of disciplinary problem in mathematics learning.

3.6. Analysis of data

The information was collected from the observation (check list), questionnaire for teachers and students, interview schedule for students and achievement score of students in mathematics subject to determine the problems of physical management, disciplinary management and students score in mathematics subject. This information was categorized into problem of physical management, problem of disciplinary management and its effect in students' achievement. Each category was analyzed and interpreted in the tabulation form of the data and in the descriptive way.

CHAPTER-IV

ANALYSIS OF DATA AND INTERPRETATION OF THE RESULTS

This chapter deals with the analysis and interpretation of the data. The researcher analyzed and interpreted the collected information in the following section:

- i. Physical problems of mathematics classroom management.
- ii. Disciplinary problems of mathematics classroom management.
- iii. Effect of physical and disciplinary problems in mathematics achievement.

4.1. Physical problems of mathematics classroom management

The researcher analyzed and interpreted the collected information in the following parts:

-) Physical resources and facilities
-) Actual physical condition in mathematics classroom.

4.1.1. Physical Resources and Facilities

Every school was managed either by the government or local community. All the observed schools have their own physical resources such as buildings, classrooms, desks, benches, blackboards, classroom instructional materials presentations and displays etc.

It was found that, most of the physical facilities were managed by local people and government. The buildings, toilets, desk, benches and other necessary facilities were provided by the donation of fund of local community and some financial support was given by the VDCs, Municipality and NGOs.

Table No. 1

Physical Resources and Facilities of the School

S.N	Name of school	Notation	Number of buildings	Number of classroom	Number of office
1.	Shivashakti secondary school	A	3	26	2
2.	Navin higher secondary school	B	4	21	2
3.	Dudhpokhari secondary school	C	3	16	1
4.	Kalika secondary school	D	2	12	1
5.	Ratanpande secondary school	E	3	28	1
6.	Dhanubanskalika sec. school	F	2	12	1
7.	Maharudra secondary school	G	2	12	1
8.	Arvavijaya secondary school	H	2	12	1

4.1.2. Actual physical condition of mathematics classroom

The information about the actual physical condition of mathematics classroom suggested through questionnaires and research observations are presented in the following table.

The researcher distributed questionnaire form as in the table no. 2 and the information were collected from eight mathematics teacher, thirty two students. The researcher himself also observed the facilities and actual physical mathematics classroom management. The researcher analyzed data and made interpretation of the results in the following schools.

Shivashakti Secondary School

Shivashakti Secondary School, located at Fulbari, Pokhara was one of the sample school. The school has 3 buildings and 26 rooms. All the classrooms were full of furniture and well ventilated. Windows, doors and blackboards are kept in proper place and size. According to mathematics teacher, Shivashakti Secondary School was well physically equipped. The provision of clean drinking water and toilet was good. The view of students about physical problem of the school was in this way: there were sufficient desks and benches in classroom. The classrooms were well ventilated and lighted. Drinking water and toilet were good but there were no sufficient teaching materials.

From the above information it was found that the school had its own physical resources, facilities and buildings. There were some instructional materials. Playground was also good, therefore the researcher came to concluded that Shivashakti Secondary School was physically well equipped.

Navin Higher Secondary School

Navin Secondary School, located at Gairapatan, Pokhara, had 4 buildings and 22 rooms. It had sufficient furniture. The classrooms were clean, well ventilated as well as lighted. There were dustbins at the back corner of each room. The room contained a black board which was clean and easily visible from each corner of the room. The researcher found that there was clean drinking water supply at the school and condition of toilet

and playground was also good. There was good library and teaching materials were managed.

From the above information in table no. 2, the researcher came to conclude that Navin Secondary School was physically well managed. The school has its own physical resources, physical facilities and school buildings. The school had sufficient classrooms along with sufficient furniture. There were some instructional materials; white board, Geo-board, some mathematical instruments, dustbin and other furniture were well managed.

Dudhpokhari secondary school

Dudhpokhari secondary school, located at sodha VDC, had 3 buildings and 16 rooms. The following information was collected by the teacher questionnaire: According to mathematics teacher, the physical environment of Dudhpokhari secondary school was very good. The school had sufficient rooms for students and there was sufficient furniture. The rooms were well ventilated along with good blackboards. There was slight problem of clean drinking water. Another physical problem was that there were no sufficient teaching materials.

The information was collected from the students' responses. The students' of class-IX express that there were not modern teaching materials and playground but other physical facilities were good.

The analyses of the information in the above table no 2 showed that Dudhpokhari Secondary school had its own physical resources, physical facilities and school buildings. The buildings were made up of cement. Its obvious that the school was physically equipped.

Kalika secondary school

According to mathematics teacher about the physical problems of Kalika secondary school, there was not clean drinking water. The classrooms were not well ventilated. There were not sufficient teaching materials. The roof was of tin but there were no fans. There were no sufficient teaching materials but there were some teacher-made and students made materials. However the lack of physical facilities, the students and teacher were more laborious, so that the classroom was cleaned and school environment was good. There was lack of sufficient furniture in the classroom.

The students filled the questionnaire form about the physical problems of Kalika secondary school. There was no clean drinking water. There was lack of fans in the classroom. The researcher himself found that there were minimum required physical facilities. Buildings were old and classrooms were also old type and desk and benches were somewhere damaged. However the students and teacher were disciplined and classes were quiet. From the above information the researcher concluded that the school was not physically equipped.

Ratanpande secondary school

Ratanpande secondary school, located at Arva Vijaya VDC, had 3 buildings and 28 rooms. According to the mathematics teacher, Ratanpande secondary school was physically well equipped. The school had own building which was made of concrete. There are sufficient classrooms and furniture. Classrooms are well ventilled. There was sometimes problem of clean drinking water but the provision of toilet was good.

The researcher himself found that there was no clean drinking water but the building was very good. There were many rooms some were not in

use, furniture were sufficient. There was a library which was constructed under the Japanese donation. Therefore, the researcher concluded that the Ratanpande secondary school was physically well managed.

Dhanubans Kalika secondary school

Dhanubans Kalika secondary school, located at Chahachowk VDC was one of the sample schools. It had 2 buildings and 12 rooms. According to mathematics teacher, about the physical problems of Dhanubans Kalika secondary school, there were not sufficient furniture's in the classroom. The roof of the building was made of tin and there were no fans. There was not the facility of clean drinking water. Mathematical instruments were not available as required. Blackboards were small in sized and in poor condition creating problems for teaching learning.

Students filled the questionnaire form about the physical problem of Dhanubans Kalika Secondary School. There was not clean drinking water. There was not sufficient furniture in classroom. But there were dustbins in classrooms, therefore the classrooms were clean. Students themselves were active to manage the classroom environment.

The analysis showed that Dhanubans Kalika secondary school had its own school buildings. The classrooms were small. There was lack of enough furniture in classroom. Doors and windows were in poor condition. The size of blackboards was small. Students should clean their room themselves. There were some mathematical materials which are made by teachers and students. Therefore, the researcher concluded that Dhanubans Kalika Secondary School was not physically well equipped.

Maharudra secondary school

The information was collected from the teacher questionnaire. One of the mathematics teachers filled the questionnaire about the physical problems of Maharudra secondary school. There were not sufficient materials. There was not sufficient clean drinking water. The building was damaged by landslide. Students should clean their rooms themselves. There was no facility of toilet, mathematical lab and tools for extra activities. He also wrote that there was no playground. The physical condition of this school was very poor.

The informations was collected from the student's questionnaire. According to the students of Maharudra secondary school, there were not sufficient mathematical materials for doing the mathematical problems. There was small playground. The classrooms were very small and temporary so that students had felt uncomfortable on sitting during the teaching period.

The analysis of table no. 2 showed that Maharudra secondary school had its own school building in poor condition. Classrooms were not appropriate, blackboards were small in size, provision of drinking water and toilet was not good. Therefore the researcher concluded that the Maharudra secondary school was not well physically equipped.

Arvavijaya secondary school

Arvavijaya secondary school, located at Arva vijaya VDC, had two buildings and 12 classrooms. The buildings were made of cement and roof of tin. The buildings and classrooms were of old type. There was no sufficient furniture. The classorms were not so ventilated and lighted. Blackboards were small in size. There were not instructional materials.

The view of students about physical problem of the school was; The classroom became hot in summer and there were not fans in the ceilings. The roof was not in well condition, during rainy season, the rain enters into the room because of damaged roof and open windows. The class becomes noisy during rains.

The researcher himself found that walls and blackboard were not colored. Classroom was not enough clean and there were not sufficient furniture. Therefore the researcher concluded that Arvavijaya secondary school was not well physically equipped.

At last, the observation showed that Shivashakti secondary school, Navin higher secondary school, Dudhpokhari secondary school and Ratanpande secondary school had sufficient furniture, classroom, drinking water, toilet etc. therefore the researcher came to conclude that they should be in the list of well physically equipped schools. Similarly, Kalika secondary school, Dhanubaskalika secondary school, Maharudra secondary school and Arvavijaya secondary school had no such sufficient things. Therefore, this school came to be listed under the list of not well physically equipped school.

4.2. Disciplinary problem of mathematics classroom management

The informations were collected from the teacher's questionnaire and student's questionnaire. The following disciplinary problems were arising in the classroom situation due to insufficient physical facility.

Some schools had lack of window in the classroom, due to this reason the classroom was dark and the room was not well ventilated. Students used to shout as they feel any difficulty to see in the blackboard. They felt warm in classroom due to the lack of ventilated rooms. There was no provision of

fan in each school. Most of the schools had not use teaching materials in mathematics teaching. Teachers were feeling difficult to deliver the clear concept to the students.

Students used to talk with each other about the subject matter in their own pace which made the classroom noisy. Some mathematics classrooms had the small size of blackboard, so that the some problems of mathematics could not be solved completely in the single writing. Important formula and statement could not be shown on blackboard.

Some schools had small sized of classrooms. So they were not getting chance to participate in group work, student quarrel with each other due to lack of seating arrangement.

The above collected data showed that four schools were physically well equipped and four schools were not physically well equipped. Some schools had physical facility problem and they were facing the student's disciplinary problems. But all not physically well equipped schools were not affected by disciplinary problems, because only physical problem is not cause of disciplinary problem. If the teacher and all the school family were aware about school environment then there would not be disciplinary problem in classroom and around the school. The above problems are helpful to understand the students' mathematics learning.

In response to the questionnaire "what types of activities fall under disciplinary violence, in your opinion?" asked by the researcher to the eight respondents of mathematics teacher, they had the following comments:

- Does not concentrate in the class time
- Does not do his homework
- Coming late in classroom
- Making noise in classroom

- Talking with friends in class time
- Frequently absent in classroom
- Not obeying teachers
- Making room dirty
- Laughing in classroom
- Not respecting teacher
- No bringing teaching learning materials (book, note copy homework etc)

From the students interview, the following activities were the students discipline violence activities in their sense.

- Quarreling with each other, no preparation of the next day's lesson.
- Not wearing uniform
- Forgetting to bring book
- Throwing, torn paper on the floor
- Writing the rough word on the black board
- Walking on the desk, being dirty
- Tearing the book, eating inside the classroom
- Threatening the friends
- Talking about non-sense matter inside rooms, teasing the friends and cheating on test.

The researcher used the indicators given by Postamentler and Steplemen (1997) to identify the disciplinary problems in the classroom. The information was collected from the mathematics teachers about disciplinary problems are presented in tabular form as follows:

Table no-3**Appearing disciplinary problems in mathematics classroom**

S.N	Disciplinary Problem	Always/often/sometimes/never	Frequency occurrence
1.	Not doing his/her homework	Often in (E,F,G,H) and sometimes in (A,B,C,D)	12
2.	Enter in classroom without permission	Never in all schools	0
3.	Often arriving late to class	Sometimes in (C,D,E,F,G,H) and Never in (A,B)	6
4.	Absent in classroom	Sometimes in all schools	8
5.	Chewing and cracking gum	Often in (E,D,G,H) and Sometimes in (A,B,C,F)	12
6.	Doing work of another subject in mathematical class	Sometimes in (A,E,G,H) and Never in (B,C,D,F)	4
7.	Looking outside from the window	Sometimes in (B,G,E,H) and Never in (A,C,D,F)	4
8.	Making noise in the classroom	Sometimes in (A,E,F,G,H) and Never in (B,C,D)	5
9.	Not respecting the teachers	Never in all schools	0
10.	Absent in schools	Sometimes in all schools	8
11.	Quarrelling with one another	Sometimes in (C,D,G,H) and Never in (A,B,E,F)	4
12.	Using vulgar language in classroom	Sometimes in (C,D,E,H) and Never in (A,B,F,G)	4
13.	Coming into the classroom without books , notebook etc.	Often in (C,E,F,G,H), Sometimes in (A,B,D)	13

14.	Not doing class work	Sometimes in (A,C,G,H) and Never in (B,D,E,F)	4
15.	Coming to class without prepared	Often in (B,C,G), Sometimes in (A,D,E,F,H)	11
16.	Getting out of seat during the lesson	Never in all schools	0
17.	Does not concentrate for the lesson	Sometimes in all schools	8
18.	Not wearing uniform	Sometimes in (C,F,G,H) and Never in (A,B,D,E)	4
19.	Cheating on the test	Sometimes in (C,E,D,G,H) and Never in (A,B,F)	5
20.	Threatening the teacher physically or verbally	Never in all schools	0

To find the occurrence of disciplinary problems in the selected school, the researcher had distributed the questionnaire for eight mathematics teacher. There were twenty disciplinary problems and four rating scales (always, often, sometimes, and never). Each disciplinary problem was rated by respondents weight age of score rating scale were always by 3, usually by 2, sometimes by 1 and never by 0. The frequency of the attributes was calculated by "summing the weight age of score, at the same attributes of each respondent." There were eight respondents and the largest weight age score of rating scale is four. So, the largest frequency would be 24. Similarly, the smallest weight age score of rating scale was zero, therefore smallest frequency would be zero. On the basis of this the range goes from 0-24.

If the frequency of attributes is 0, it means that this disciplinary problem has never appeared in the classroom situation. The attributes which have weight age value one or more than one up to twenty-four means that these problems are appearing in mathematics classroom.

According to table no. 3 the following disciplinary score can be tabulated in table no. 4.

Table No. 4

Disciplinary Score Table

S.N	Name of school	Maximum Disciplinary Score	Appeared Disciplinary Score	Average Disciplinary Score
1.	Shivashakti secondary school	24	9	13.5
2.	Navin higher secondary school	24	8	
3.	Dudhpokhari secondary school	24	15	
4.	Kalika secondary school	24	11	
5.	Ratanpande secondary school	24	16	
6.	Dhanubanskalika sec. school	24	12	
7.	Maharudra secondary school	24	18	
8.	Arvavijaya secondary school	24	19	

In the above table no. 4, the researcher found that not all physically well equipped schools have not disciplined but some not physically well schools were also disciplined. For class environment physical problem was not only the factor to maintain the discipline. For this, teacher and students themselves should aware to maintain the classroom environment.

From the above table no. 4 most of the schools have some disciplinary problems. Maharudra Secondary School and Arvavijay Secondary School have more disciplinary problems than others. Similarly Kalika secondary school and Navin Higher Secondary School have less disciplinary than other Schools. The table shows that Shivashakti Secondary School, Navin Higher Secondary School, Dudhpokhari Secondary School and Kalika secondary School have below than (13.5) average disciplinary score. Therefore the researcher concluded that these schools are disciplined Schools. Similarly, Ratanpande Secondary School, Dhanubaskalika Secondary School, Maharudra Secondary School and Arvavijaya Secondary School have more than (13.5) average disciplinary score. Therefore the researcher concluded that these schools are not disciplined Schools.

4.3. Effect of physical and disciplinary problems in mathematics achievement

The research her had collected the data of students mathematical achievement score with the help of mathematics teachers and related school administration from grade IX of each school. The average mathematical score of students was calculated as the sum of all students' score which is divided by the number of students. The table is as follows:

Table No. 5**Comparison of Mathematics Achievement**

S.N.	Name of Schools	Average mathematics score of students	Total average
	Well physical and disciplined schools		49.03
1.	Shivashakti secondary school	56.36	
2.	Navin higher secondary school	58.57	
	Well physical but not disciplined schools		
3.	Dudhpokhari secondary school	46.27	
4.	Ratanpande secondary school	44.68	
	Not well physical but disciplined schools		
5.	Kalika secondary school	52.50	
6.	Dhanubanskalika secondary school	51.52	
	Not well physical and not disciplined schools		
7.	Maharudra secondary school	42.62	
8.	Arvavijaya secondary school	39.74	

Sources: From marks ledger 2067 of related schools

The calculated table value of obtained students mathematics score was using the following formula:

$$\text{Average mathematics score} = \frac{\text{Sum of Students' Score}}{\text{Number of Students}}$$

The analysis of the information in the above table no. 5 shows that Shivashakti Secondary and Navin Higher Secondary School have high achievement than the other Schools. The researcher had concluded these school as well physical and disciplined Schools. Maharudra Secondary School and Arvavijaya Secondary School had low achievement than other Schools. They were not well physical and disciplined Schools.

The above table no. 5 showed that the disciplined schools had above the average achievement and not disciplined schools have below the average achievement. Therefore physical problem increased the disciplinary problem then the mathematics achievements were influenced.

CHAPTER-V

SUMMARY, FINDING, CONCLUSION AND RECOMMENDATION

5.1. Summary

This study was concerned to identify the problem of physical and disciplinary problems of mathematics classroom management and its effect on student's achievement.

This study had listed the physical resources, facilities, actual physical classroom management condition, and disciplinary problems appearing in the mathematics classroom and arising disciplinary problems from physical facilities.

The main tools of the study were the questionnaires and observation form developed by the researcher. The researcher has distributed the questionnaire for the eight mathematics teachers and thirty two students of eight schools. Student's mathematics achievement score was collected from the source of ledger of 2067 from concerned schools.

5.2. Findings

The collected information from the observation, questionnaire and interview schedule yields the following results as the findings of the study.

- The observation showed that some schools were physically equipped but had not sufficient teaching materials.
- There was not facility of drinking water in each school?
- Most of the schools have not their own library.
- There is no mathematics laboratory.

- Most of the schools had not appropriate size of blackboard and number of windows doors, desks and benches.
- Provision of clean drinking water was not so good in some school.
- It was also found that most of the mathematics teachers did not check their students' homework.
- There was lack of teaching materials in mathematics class and teachers were less interested to use teaching material.
- Some schools had not sufficient ventilation and fans in the classroom.
- There were no school without disciplinary problem. Absent in classroom, coming without book and preparation, concentrate for the lesson, chewing gums were the common disciplinary problems in all schools.
- It was found that all well physically equipped schools were not disciplined schools but some not well physically equipped schools were also disciplined schools. However it is realized that the physical problem generates some disciplinary problem.
- It is found that physical and disciplinary problems in classroom affect the mathematics achievement of the students.

From the above analysis and interpretation of data, disciplinary problems were being the cause factor to understand mathematical concept and its effect in student's mathematical achievement. Therefore, well physical and disciplined management of schools students' mathematical achievement were better than not well physical and disciplinary schools.

5.3. Conclusion

Classroom management is very important for effective teaching learning process. Proper classroom management helps to achieve the objective of teaching and learning. Teaching learning process takes place inside classroom and it is the place of acquiring knowledge for students so the environment of classroom must be inviting, exciting and safe place to learn. Mathematics is one of the important subjects in the school curriculum. Therefore, to achieve the determined objectives of mathematics, classroom should be properly managed.

Most of the classroom did not have appropriate arrangement of furniture like benches, desks, chairs and blackboards. Classrooms were not clean. There were problem of clean drinking water, no good facility of toilet and teaching materials for mathematics.

Lack of physical facility and role of teacher's increased student's disciplinary problems in the classroom. Often arriving late to classroom, looking outside, absent in classroom, making noise in the classroom, quarrelling with each other and using vulgar language were the most prevailing disciplinary problems in mathematics classroom. Thus the disciplinary problems were really affecting the mathematical achievement of the students.

From the above study, the researcher concluded that the physical facility is necessary but not sufficient for better achievement. The disciplinary aspect affects the student's achievement. Therefore, well physical and disciplined schools have better achievement than not well physical and disciplined schools.

5.4. Recommendation

On the basis of finding the study the following recommendations are made.

- i. This study shows that the public school did not have satisfactory management, so that the concerned authority should pay their attention on it.
- ii. Most of the teachers argued that the reason of lack of physical facility is the lack of budget in education. So government should emphasis to increase investment in education.
- iii. Teacher should be encouraged to identify disciplinary problems in the classrooms and to suggest measures for coping with them.
- iv. Teacher-student-parent relationship is poor which makes the teaching learning activities unsuccessful. So it is required to make friendly relationship between teacher, students and parent.
- v. The related factors (teachers, students, schools, administration, institute, community etc.) should be attentive and should give their interest on the mathematics classroom management. Concerned authority should conduct adequate number of the workshops seminar, meetings, trainings etc. to improve the mathematics classroom management.
- vi. This study was limited only in Kaski district thus the findings of the study couldn't be generalized in the broad sense. Thus, it would be better if the study would be carried with covering broad areas.
- vii. Similar nature of studies should be conducted in different aspect of classroom management.

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Table No. 2**Actual Physical Mathematics Classroom Management**

S. N	Name of school	School building	Ventilation & Light of Classroom	Furniture	Condition of door & windows	Condition of blackboards	Cleanness of classroom	Provision for Drinking water
1	Shivashakti Secondary School	RCC Plastered	Well ventilated & Lighted	Sufficient furniture available	Appropriate	Well	Dustbin Used	Tank and tap
2	Navin higher Secondary School	RCC Plastered	Well ventilated & Lighted	Sufficient furniture available	Appropriate	well	Dustbin Used	Tank& tap
3	Dudhpokhary Secondary School	RCC Plastered	Well ventilated & Lighted	Sufficient furniture available	Appropriate	Well	Dustbin Used	Tank, tap, well
4	Kalika Secondary School	RCC Plastered	Not well ventilated & Lighted	Lack of sufficient furniture in class	Not in good condition	Small & not in good condition	Sometimes dustbin Used	Tap, but lack of water
5	Ratanpande Secondary School	RCC Plastering, with ceiling of tin	Well ventilated & Lighted	Sufficient furniture available	Appropriate	Well	No dustbin Used	Tank and tap
6	Dhanubans Kalika Sec. School	Plastered wall, ceiling of tin	Not well ventilated & Lighted	Lack of sufficient furniture in class	Not in good condition	Small and not in good condition	Sometimes dustbin Used	Tap
7	Maharudra Secondary School	Use of block & tin	Not well ventilated & Lighted	Lack of sufficient furniture in class	Not in good condition	Small and not in good condition	No dustbin Used	Lack of drinking water
8	Arvavijaya Secondary School	Plastered wall, ceiling of tin	Not well ventilated & Lighted	Lack of sufficient furniture in class	Not in good condition	Small and not in good	Use of dustbin Used	Tap