

# CHAPTER- I

## INTRODUCTION

### 1.1 Background of the study

Most of the teaching- learning activities are found to be authoritative and autocratic from the ancient time to present. "GURU DEWO BHAWA" is a slogan in Hindu culture which means teacher is god to whom one should not interact, neither question. According to this culture, student should obey the teacher like a trained animal. The way to ask question to Guru should rather be humble.

In this context, Nepalese family environment is also guided by authoritative ideals. According to *Chanakya Niti*:

“If student and son are treated with excess love and care, they may lead a bad course, if treated cruelly they lead a good course in their life. So they (Student and son) should be treated cruelly.”

Education plays vital role in development. Civilize and cultured society with independent and alert elector is the positive sign for the development of nation. Education is a tool for this. Government of Nepal is committed to universalize education. "Education for all" is mission of Nepal (introduced by UNO, 1990) for its national plan of action the tenth five-year plan talks about it. Now the nation has tried to give the "quality education for all".

Democracy means freedom of activities. It is an important part of human life. Good activities make good life and good activities are the result of education. Democracy facilitates the process of education in practical way not only theoretical way. Democracy and education cannot be separated from each other. The main focus of education programme is student and learner. So, it is very important that education programmer should be run according to the needs, interest and importance of the learners. Teaching should be suitable for learner. Learning can only be

accomplished if learners can find ways to link their own prior experiences gained by themselves and offered by their teachers.

If the intention of learner is to learn, learner can learn without teaching as well. If the learner does not want to learn then learning does not take place no matter the teacher tries his her level best. So, one should teacher learner without controlling so that they can develop democratic characteristics and solve the problem democratically without being dependent on others.

According to oxford dictionary, democracy is a government that allows freedom of speech, religion and political opinion that respects the rights of minorities.

John Dewey (1940) in "Education Today" state "Modern life means democracy, democracy means feeling intelligence for independent effectiveness - the emancipation of mind as an individual organ to do its own work."

In similar note, Fielding's states (1989), "democracy is understood as self- government in a social setting, it is not a starting place. Autonomy is not the condition of democracy rather democracy is the condition of autonomy. Without participating in the common life that defines them and in the decision- making that shapes their social habitat, woman and men cannot become individuals. Freedom, justice, quality and autonomy are all products of common thinking and common being because democracy creates them."

Similarly, Saxena (2001) defines democracy as one which abolishes all distinctions of colors, caste, creed and gender. It guarantees equality of opportunities to all. In short, justice, fair play, freedom equality and fraternity are the watchwords of democracy is such set of individuality of one and all is given due regard.

### ***Principles of Democracy***

Democracy lies in the application of the basic principles of democracy. Saxena (2001) identifies the following basic principles of democracy:

- (i) Freedom
- (ii) Equality
- (iii) Fraternity
- (iv) Justice

Educator Henriksen (1990) presented six democratic principles (in pairs) which are as following:

- (i) Freedom of expression and publicity.
- (ii) Resourcefulness and self-administration.
- (iii) The individual and the collective's development.

According to Hart (1997), the following are some simple principles of democratic process:

- (i) Children should understand the Intentions of the project.
- (ii) The organizational structure and power relations should be made clear to all participants at the beginning.
- (iii) Rules should be established through dialogue at the start of the project and amended by dialogue throughout.
- (iv) While not all children need to be equally involved in all phases, it is essential that, to the extent of their intellectual capacity, they are fully informed of the history and complete scope of the project and where they currently are in the process.

Another researcher Antony Luby (2001) argued that there are basically three approaches to educational practice: i) technical, ii) practical, iii) emancipator. He added that to fashion a democratic approach with in the classroom, teacher should strive a balance across these three approaches.

The above discussion implies that democracy demands freedom on choice and Gurus (in conventional ways of teachings) on the other hand

requires the maintenance of autocratic environment. In this context, I am curious to know about the classroom culture of mathematics teaching.

Mathematics is a body of knowledge in the area of science, with its own symbolism, terminology, contents, theorems and technologies. Students must know lots of mathematical concept, theories and relations at a time. They must know the mathematical language but more of them pass their time in listening and reading in terms of writing, thinking analyzing and using the mathematical language. As a result, students miss the logical power and they cannot develop the creative power to think, in this situation theoretical knowledge with rote learning can be found. In this way, mathematics is a challenging adventure. Classroom practice may give the solution as a classroom is considered as main route for teaching learning activities. A good democratic classroom can provide real mathematical knowledge through freedom, equality, fraternity and justice.

Primary level mathematics program seeks to develop necessary mathematical skill for solving practical problem encountered in daily life. It builds the entire basic foundation as pre-requisite to the next level mathematics education. So, primary level is just like the foundation level of a building in which one can build the mathematical competency in pupils in days to come. This means I will explore the classroom culture of mathematics education in primary level.

Montessori emphasize on the development of the individual child with complete freedom to him work in his own way without any interference from other. Bhatia and Bhatia (1986) further added for effective learning on self-activities according to child needs, interest and capacities. These ideas also encouraged me to understand the classroom culture of mathematics.

Hence there is a great effect of teacher's instructional activities in the achievements of students. Students of primary level prefer to interact with friend and teachers in relaxed and democratic atmosphere without having any domination. Teacher's dominating classroom behavior is also more

responsible for the dropout and failure of students. In this situation, I would like to explore classroom instruction of math teachers in primary school. The closure of my study is whether the classroom is democratic or not in math teaching.

## **1.2 Statements of the Problem**

People do believe that status of mathematics education is not so enthusiastic. Classroom is a heart of mathematics teaching. The problem mainly lies in classroom practice in mathematics especially at primary grades in Nepal. There are crowd, praise and power in the classroom life where democracy certainly plays a vital role in facilitating active participation of the student in teaching learning activities (Jackson 1968). But such studies have not been specifically undertaken in Nepalese context in which student's participation is very low. In this study participation is self-initiation of mathematical problems and discussion with freedom, equality, fraternity and justice that are the basic principles of democracy.

According to the study of National center for Educational Development (NCED, 1999) and Basic and Primary Education Program (BPEP, 1999), classroom practices in the primary schools are not satisfactory. According to them, mainly teacher-centered approach is used. Teachers are not successful in using child-centered approach, creating curiosity in students, paying attention to all with freedom of interaction in the classroom. This shows the need of studying democracy in classroom practice. So, focus of the study is to examine the democracy in classroom practice.

Karmacharya (2001), states the teachers treat the children as objects authoritatively. Teacher still have very rigid view of learning which has led them to be powerful autocratic leader rather than democratic facilitator in the class.

This research problem is concerned to examine the democratic approach in classroom practice in mathematics while conducting activities

for facilitating learning through children's participation because children own experience and interest are the bases for learning of mathematics. So, the investigator has taken up a research project titled "Democracy in classroom practice in teaching mathematic at primary level in Myagdi District."

Democratic practice in classroom facilitates children's learning. These activities are expected to support the democracy in classroom practice. The following questions will clarify the problem of this research:

- (i) What are the important aspects of democratic classroom practice?
- (ii) Is there democratic approach in classroom practice in teaching mathematics at primary level? Or,
- (iii) If not, what are the strong factor hindering to democracy in classroom practice?

### **1.3 Rationale and Significance of the Study**

Democracy obviously lies in practice not only in theory. Democracy in classroom practice certainly helps to improve the quality of education. The following points are rationale for choosing these issues.

- ) Democratic classroom practice enhances child-centered activity and learning by doing is a key activity in mathematic learning. Therefore, this study can provide some insights into the significance of democracy in facilitating children's mathematical learning.
- ) Some concepts in mathematics are abstract and logic is main part in solving mathematical problem. Individual difference is a hurdle to give equal knowledge to all children. In this context, democratic practice in classroom can solve the problems created by individual difference.
- ) The BPEP II (1997, a) has given priority to improve classroom teaching or practice. i.e. to replace the teacher centered approach by the child centered one and thus study is relevant to BPEP.

- ) Higher Level National Education Commission (SLNEC, 1998) has recommended the objectives of teaching in primary schools to motivate children toward school, creating their interest through democratic practice not just the academic and content oriented teaching.
- ) The government of Nepal is committed to provide "quality education for all" not just "educational for all" through BPEP. This also demands democracy in classroom practice.
- ) The finding can be helpful in increasing the achievement level of students through democratic classroom practice.

Such Studies have not been undertaken in Nepal and it is likely to inspire the researcher and other stakeholders to give appropriate attention towards classroom learning.

#### **1.4 Objectives of the Study**

The main purpose of this research was to investigate the status of democratic practices in classroom. In addition to this researcher was also interested in some specific objectives.

##### **Main objective**

- ) To examine the democratic approach in classroom practice in mathematics education at primary level.
- ) To ascertain the important aspects of democratic classroom practice.
- ) To investigate the factors hindering democratic practice in classroom teaching.
- )

#### **1.5 Definitions, Assumption, Limitation and Delimitations**

##### ***Definitions***

**Democracy:** Democracy is participation, power sharing, fraternity, freedom, interaction and equal opportunity for learning activities in classroom practice: in mathematics.

**Classroom practice:** A set of activities performed in mathematics classroom by teacher and student for teaching learning purpose is classroom practice. It refers to everything that goes on in the classroom such as relationship interaction and communication between teacher and student and among students only.

**Rights of the child:** These include the rights which are given to child in classroom such as freedom, justice, quality of opportunity and autonomy in classroom and no discrimination regarding gender, race, ethnicity, class, age etc to choose the problem of a topic of mathematics.

**Participation:** Participation means in all classroom activities, children should take part actively and involved in teaching learning process in classroom practice in mathematics.

**Interaction:** Sharing the view, interest and problems of mathematics one to all the classmates and teacher in classroom practices is interaction.

**Facilitation and self-government:** Making easy to learn to mathematical concept by child centered and inductive approaches through discovery learning and problem solving etc in pair or group activities is known as facilitation. Students are encouraged to learn with enjoying autonomy having practice of cooperation, decision- making, shared responsibility and accountability in classroom is self government.

**Equal opportunity and individual difference:** No discrimination in giving rights to child in classroom is the meaning of equal opportunities. Different types of Student according to abilities to solve the mathematical problem is individual difference.

**Democratic method of teaching:** The method of teaching in which teacher as a 'facilitator' who introduce the course and rest is done by the students if in any difficulty, teacher knots out the problem is democratic method of teaching in classroom practice, which is a child centered method. The method, which has indicators of democratic practice of classroom, is democratic method of teaching.



**Social Activities:** Activities, which will be done by student not only in bookish and academic knowledge but also social, cultural and co-curricular activities with reference in mathematics are social activities.

### ***Assumption***

Participant observer in the classroom in a period of a day will establish rapport with the students will not have a reactive and effective on the behavior to be observed.

### ***Limitations***

Indicators of democracy in classroom practice that were taken on the previous research (Saxena, 2001, Carr, W., 1986, Horne, 1978, Karmacharya, 2001) have not been validated in Nepalese context.

### ***Delimitations***

This study was limited to Myagdi district. The study has included grade three and grade five of four schools of Myagdi district. Observation duration was one day. All schools were public schools in this study and two schools were from rural area and two schools were from urban area of the country.

## **CHAPTER -2**

### **LITERATURE REVIEW**

#### **2.1 Reviewing the Related Literature of the Study**

There are not many scholarly studies about the classroom practice of mathematics in Nepal, some research are in a process of learning, some are in method and few are in achievement. Reviews of some related studied in classroom practice are as follows:

Karmacharya B.N.(2001) did his M. Phil. Thesis entitled "Democracy in classroom practice in the primary schools of Nepal: This study is related to the way of life of children in the classroom. He adapted the critical hermeneutic tradition, phenomenological and symbolic interaction to draw inferences from the data collected through interviews and observation from 3 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. Teacher 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 link 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 impact of hidden curriculum on the life in classroom needs to be taken in to consideration for promoting democracy in classroom practice.

Karki B.K.(2001) did his M. Phil, thesis "A study on classroom practices in the primary schools of Nepal in relation to the environmental education." The purpose of this study was to gain understanding on the classroom practice of grade four environment education subjects in Nepalese public primary schools. It also tries to explore factors that

influenced classroom practices and ways to improve them. Data were collected through interviews with subject teachers, observations of classroom practice in selected schools and document analysis. It 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 that environment education classroom practices in grade five of selected public primary school were not concluded satisfactory due to lack of motivated and efficient teachers, availability of required resolves and effective educational policies.

Neupane R.C.(2001) did his experimental research on "A study on the effectiveness of play method in mathematics teaching at primary level." His study intended to answer the question whether the performance of the pupils of primary level taught by play-way method. He collected the data through pre test post-test in class one on addition and subtraction. Two equivalent groups were established on the basis of pre test results and randomization. Researcher taught himself in experimental and control group at the duration of one week and took post-test to both groups in someway. The data was analyzed and interpreted statistically with t-test and discovered that experimental group achieved better performance than the control group. Hence his finding is that the achievement of students taught by play way method was significantly different than the achievement of the students taught by traditional method.

BPEP (197, b, c, 1998) and NCED (1998b, c, 1999) in their studies have revealed that most of the teachers in primary school in Nepal are using teacher-centered approach and thus their classroom practices may not be scientific and suitable to the learning process of the child. Child centered approach which places the learner at the center of the educative process and not the subject to be taught, is naturally relevant to the children's learning process. An understanding of the nature of children's cognitive development is, therefore, necessary in order to appreciate how

and what can be offered as education to primary school children. If we are to teach anything successfully to children we must begin by asking ourselves whether the approach we want to apply and the subject we intend to teach are suited to our pupils' learning process and ability so that they can actively participate in teaching-learning activities.

Shrestha S.K.(2000) did his research work on "A study to compare the effectiveness of the inquiry method verses the traditional method of teaching mathematics in a selected elementary class of Nepal" in the unit fraction and it's addition with a view to test the effectiveness of the inquiry method of teaching mathematics to a selected class in Nepal. The experimental group of the strength of twenty pupils of fifth grade was taught by the inquiry method of teaching. Control group of forty-five students was taught by traditional Nepalese method of instruction (students participated and discussed in the classroom were discouraged). He concluded that the performance of pupils taught by inquiry method of instruction does not improve significantly as compared to the performance of pupils taught by the traditional Nepalese method of instruction.

CERID (2002), "Effectiveness study of teacher trainings" A study report submitted to NCED by CERID with the objectives to identify the professional activities carried out by the traditional teachers in the real classroom situation and to find out the barriers that hinder teachers for translating the acquired skills in to the classroom practices. He selected three hundred five teachers, thirty six principal and sixteen resources person from log schools working in three districts. Tools were classroom observation checklist accompanied by interview questionnaire for the trained teachers. Focused group discussion with school managing committee members was done. This study concluded that the seating arrangement was found poor and as a part of instructional management, about 29 percent of teachers were found using group work /pair work in class and only a very small number of them were found using the blackboard properly and encouragement for the student's participation was

not found to be satisfactory. Other findings of the report were that the interaction between students and teachers was observed in 59.4 percent but interaction among the students was found to be negligible as well as more than two-thirds of the teachers were found to be aware of the use of feedback mechanisms followed by appropriate use of questioning techniques and more than two-thirds of the students reported that they were given homework and class work.

MITRA (2001), in "A study on teaching materials and subject-wise classroom observation" has investigated the availability and utilization of curriculum materials in public primary schools with the research questions; how have these curriculum materials been used in the classroom? What have been the instructional practices? The research team visited 50 schools and observed 150 classes of mathematics, social studies and Nepali in each school. The tools for the study were interview schedules, classroom observation forms, teaching materials surveys and researchers' reflective diary notes and illustrations were the major approaches of teaching. This report concluded that trained and experienced teachers integrated students' ideas more and the students and teachers had inadequate interaction in the classroom environment.

Upadhyaya H.P.(2001) did his dissertation on "Effect of constructivism on mathematics achievement of grade V students in Nepal" from Panjab University, Chandigarh, India with the research questions: Does a constructivist approach produce better results than a conventional approach in students' achievement in terms of immediate learning, retention and net gain? Does construction encourage the habit of self-learning and self-correcting? Can constructivism in mathematics be applied in a Nepalese school situation? What could be the problem that might arise while applying constructivism? The research was conducted as an experiment with the three pairs of key words: action/reflection, viable/autonomy and scaffolding/ethnography. The aim of the research was to adopt and advocate constructivism in teaching mathematics in Nepalese

classroom. The researcher developed the teaching episodes and reliability was established. Teacher trainings were done. The achievement tests were constructed for pretest, post-test and delayed post-test and reliability and validity were established. The experiment was carried out for five month duration with the pretest, posttest non equivalent group design the experiment began, mean, SD, coefficient of variation, ANOVA, ANCOVA, bar diagram, Arrow diagram were applied. Working on the sample size of one hundred Eighty students from four schools involving two control group and two experimental groups, the investigator found the possibility of constructivism in Nepalese schools with significant difference in achievement than conventional method of teaching.

All of these studies did not focus in classroom activities with democratic aspects. My study is differing from the previous studies in the sense of democratic activities in classroom in mathematics teaching. The study was seeks to democracy in classroom practice with its indicators.

## **CHAPTER - 3**

### **THEORETICAL CONSTRUCTION OF THE STUDY**

This research is based on mainly Piaget's Learning theory. His theory is concerned to "How child learn mathematics and what content should to teach in which situation rather than how to learn mathematics". According to his theory Cognitive development of child is passes through some sequence of the four developmental stages.

- i) Sensory- motor stage (0-2 yrs)
- ii) Pre-operational stage (2-7 yes)
- iii) Concrete operational stage (7-12 yrs)
- iv) Formal operational period (12 yrs -)

According to this theory, main base of learning is self-activities of the child, which he gets from the interaction with environment and people. Environment effects learning of the child. Mental activities, which are important factors in learning, are the process of adaption with environment. This theory demands discovery and activity method to encourage children's learning in which their active participation and democracy are naturally strengthened.

Other than Piaget's theory, the convention of the right of the child (CRC, 1989), Bruner's (1960) theory (the construction theory), Bourdieu's cultural capital theory Browne (1998), Halt (1997), Horne (1978) and Freire (1970), Diane's learning theory (1939) are taken into consideration in this thesis.

Next theory of Saxena (2001, the theory of education) was also a parts of this research. He defined democracy as one that abolishes all constructions of colour, caste, creed and gender. It guarantees quality of opportunities to all. In short, justice, fair play, freedom, equality and continuity are the key of democracy.

Data was collected and analyzed and interpreted with these theoretical bases.

## **CHAPTER - 4**

### **METHODOLOGY**

#### **4.1 Design of the Study**

This is both the qualitative research as well as descriptive in nature. Students from grade three and five from Myagdi district constituted the population of the study.

#### **4.2 Sampling**

This selection of school is primarily through quota sampling. Schools were selected on the basis of their geographical proximity to the researcher as four public schools in Myagdi district. The researcher prepared a list of school in terms of accessibility. Schools were Annapurna Primary School Takam, Chandra Jyoti Primary School Khibang, Malika Primary School Durbang, Amar Jyoti Primary School Ruma in Myagdi.

#### **4.3 Tools**

Indicators for democratic practices were developed in classroom by amalgamating or mixing the concepts of different authors (Saxena, 2001; Carr, W, 1986; Horne, 1978; Kamacharya, 2001).

Saxena (2001) has given the following indicators of democracy in classroom practice.

- 1) Provision of equal opportunities and recognition of individual differences.
- 2) Democratic method of teaching.
- 3) Social activities.

Similarly, Horne (1978) described that interaction is the main aspects of democratic ideal in classroom practice.

Karmacharya (2001) has also discussed the following as the indicators of democracy in classroom practice.



- 1) Rights of the Child. ,
- 2) Mutually Responsible Relationship.
- 3) The Practice of co-operation and Decision Making.
- 4) Participation.
- 5) Facilitation and Self- Government.

Similarly, Antony Luby (Carr, W. 1986) has given three approaches democratic approach in classroom practices, which are: (1) Technical, (2) practical, (3) emancipator. He has described that technical approach as democratic teaching method, practical approach as activities, interaction and participation and emancipator approach as responsibility, opportunities, self-government and empowerment.

With all the above criteria together with another two, following indicator were developed to assess democratic value in classroom.

- ) Right of the Children
- ) Student's Participation
- ) Interaction within and Between Groups
- ) Facilitation and self Governance
- ) Equal Opportunity and individual Difference
- ) Democratic Method of Teaching
- ) Social Activities

I developed observation from an interview questionnaire for interview according as indicators of democracy in classroom and objectives of the study.

#### **4.4 Data Collection Procedure**

Classroom observation form was on the basis of the indicators. In doing so, from these observations forms, I took some aspects, which are useful for my purpose.

Using the observation from, I observed to classes (grade three and five) of mathematics lesson in every school especially in mathematics class. The duration of my study was one day in each school. It is believed

that performance of the class is usual because I convinced them that my objective of observing the class is purely academic. The observation was participatory in classroom. On the basis of indicators and objectives of the research, I developed interview questionnaire in semi-structured interviews. I took interviews with every class teacher and every class students in face to face. The respondents responded freely without hesitation as I clearly explained the objective of the interview i.e. it was only for the academic purpose.

## **CHAPTER - 5**

### **ANALYSIS OF DATA AND INTERPRETATION OF THE RESULTS**

The data, which came through observation and interview, were qualitative and these data were tabulated and summarized (Appendix D). I made a list of main points and extracted the themes to discuss on the basis of the data collected and the relevant theoretical concepts and literature review.

The methods used in this study were basically interpretative because this study analyzed and described the democratic indicators in classroom practice. This study focused on examining democratic approach in classroom practices. I used democratic indicators to examine the democracy in classroom such as right of the child participation of the child, interaction, facilitation and self-governance, equal opportunity and individual difference democratic method of teaching and social activities. I selected five different primary schools of Myagdi attached with lower secondary, secondary and higher secondary school. Data were collected through direct observation, student interview and teacher interview in class three and class five. I observed these two classes for ensuring the reliability and validity. Data came through the observation were crosschecked with the interview outcomes through student and teacher. I used observation form (Appendix A), interview questionnaire for teacher (Appendix B) and interview questionnaire for student (Appendix C) for such data collection. This study also seeks to find the main and important aspects of democracy in classroom practice and hindering factors for making democratic environment of mathematics classroom at primary level. I observed the classroom practice in the view of democratic indicators in a sequence as right of the child, participation of the child, interaction, facilitation and self-government, equal opportunity and individual difference, democratic method of teaching and social activities. I observed grade III and Grade V,

but there was no significant difference between two classes in terms of the in the indicators.

### 5.1 Right of the Child

For the right of the child in classroom there were freedom, justice, quality and autonomy in class as the sub indicators. The following table shows the score of indicators through observation, students'/ teacher's interview. There were three rating scale as frequently = 3 marks, sometime = 2 marks and not used = 1 mark to measure the indicators. Following score is the sum value of 4 different schools.

**Table 1: Right of the children**

Rights	Observation	Student's interview	Teacher's interview
<b>1. Freedom</b>			
- Interaction	6	7	8
- Self initiation	4	5	6
- Flow of ideas	6	7	8
- Social relations	4	6	5
<b>2. Justice</b>			
- Dealing child as person	8	8	9
- As object	5	5	5
<b>3. Equality</b>			
- Opportunity			
- Power sharing	4	5	8
- Reward	6	7	9
- Punishment	6	12	8
- Giving information	12	12	12
<b>4. Autonomous Class</b>	<b>4</b>	<b>5</b>	<b>8</b>

The following arguments are raised by the students' interview about child right.

) "We are just passive listener and never interact with each other."

) "Teacher always selects the topic but we never get such opportunity to flow the ideas and social relations."

) "Usually teacher gives us punishment."

From the above table and arguments, the following discussions can be confirmed.

Observation data showed that there were no interactions within students while studying. The classes were found to be quiet. Teachers selected topic on their own. There was no freedom for students to choose the topic and start classroom practice. Teacher did not take any suggestion about the lesson from the student. Students were not encouraged for any social relations. Teacher kept the classes quiet and taught what he wanted. Teacher wanted their students to follow him. Student did feel unsecured in class. There was always risk of mistakes and being punished by teacher. The observation and interview also indicated that the teacher was authoritative and students were always passive and frightened. There was no necessary freedom in interaction initiation, follow of ideas and social relations.

Generally it was found that the teacher punished students when students committed the mistakes. Here, students were treated like an object. Sometimes the teacher wanted to know the cause behind the mistakes, extent of it so that he would punish the students accordingly. But teachers' punishment exceeded the crime. Generally, if punishment doesn't fit the crime, the criminals may appear violently though the students, in this case, didn't react at all. Forms of punishment included such as biting with a stick slapping fisting and making the students stand outside the classroom throughout the period were used. Sometimes the teacher would punish the students without any proper investigation whether he later committed the mistakes or not. By doing so many students may become innocent victims as well. This is in fact a gross denial of justice in the classroom teaching.

As a multiethnic and multicultural country, Nepal has groups of people with various intellectual capabilities. And it is the case in terms of

the students. Teacher always should bear in mind about the individual nature of the student, understanding power and other intellectual factors as well. In many cases teacher should treat the students in person. But in observation, teacher taught the same thing in the same way to all children in a class regardless of their difference in age, gender, ability level, learning speed. Equally and equity was not seen satisfactory in opportunity, power sharing reward and punishment. But teachers said that they didn't discriminate in opportunity, power sharing, rewards and punishment and giving information to all the students. Students had complained that teacher gave more punishment to weak student's activities. Observation shows that there was inequality on giving information to all the students. All the students knew that which problems were class works and home works. They all listened frequently that information given by teacher.

This observation showed that the teachers controlled all the classes. They taught the students according to their wish, followed textbooks where the students did have little decision power. With the massive pressure of the teacher, students had to complete their task in the classroom by look or by crook otherwise they would get punishment. Because of this kind of situation, the students didn't fell responsibility themselves nor were motivated sufficiently. Moreover, students didn't know how to solve their mathematical problems through practical way or applied method thought they could solve them. They did it either by memorizing or rote learning. In fact, this kind of method of mathematics hinders the creativity of the students.

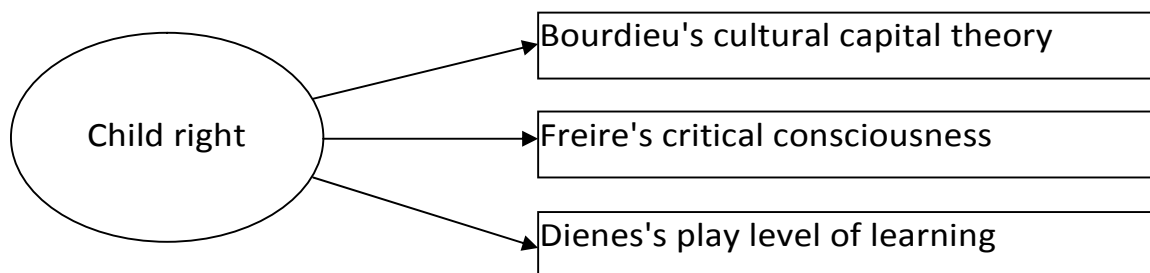
One of the teachers said that the teacher should be authoritative and dominating in the class and he must guide students for each and every activity. According to him, autonomy and freedom did not work in classroom. Students need strong control and guidance for their activities. The observed data indicated that students cordially welcomed the absence of the teacher in the class.

Power is naturally divided in classroom and school. Teachers are indeed more powerful than student and principal is more powerful than teacher. Power makes the teacher autocratic and method is automatically teachers centered. Teacher considered himself or herself omniscient and student believe that their teachers were the only source of knowledge.

According to Bourdieu (Cultural capital theory: 1998), the major role of education system is cultural reproduction; cultural reproduction refers to the way in which schools, in conjunction with other social intuitions, helps to update social and economic inequalities across the generation, which hinders qualities to all the students.

Freire (1970) defined liberation as emancipation- The point of emancipationist teaching than, is to free the minds of students from the unconscious grip of oppressive ideas about their class, gender, race or ethnic status because ideas imprison them, deliberate them and cut them off for their chance for a better life.

Dienes (Upadhyay, 2004) also focused on freedom of activities in play that helps in learning mathematical concepts. Childs rights seek freedom, justice, quality and autonomy, which are also perpetuated by convention in the right of the child (CRC, 1989). Its article 28 and 29 also advocate the different rights of the child. And again,



**Figure 1: Theoretical Connection of child right**

Hence, right to create cultural, capital to suit with his/her educational equality (Bourdieu), S/he should be critically aware of his/her situation (Freire). And they should get freedom to play (Dienes). Equally they need

freedom, justice, equality and autonomy in life. The observation made by the researcher also confirms it.

Hence the above discussion from observation and interview and the discussions of above theories implied that there was lack of rights of child in primary schools of Nepal.

## 5.2 Participation of the children

Here in this participation of child asking of questions, answer teachers' relevantly, participate in classroom; follows of directions, learning by doing activities and solving related problems are included. The following table shows the score of these sub-indicators. The score is the sum of 4 schools are frequently = 3, sometime = 2 and not used = 1.

**Table 2: Participation of children**

Participation of children	observation	students interview	teacher interview
Asked question relevantly	6	8	9
Answer teacher's question	12	11	12
Participation in classroom	10	11	12
Follow of directions	12	12	12
Learning by doing activities	4	5	7
Solving related problem	10	11	10

The following arguments also assembled through student interview:

- ) "We like to play games, we like those teacher, who played us and left before the bell has gone."
- ) "We don't ask question to teacher but we frequently give the answer of teacher's questions and strictly followed the directions of teacher."
- ) "We solve related problems and problems which are given by teacher."
- ) "We are regular in class."



The table and arguments of students give following discussions.

From the observation, it is noticed that most of the teachers were using teacher centered instructional methods. This is traditional method in teaching. Teachers were more active while pupils remained as passive listener. Teacher walk front and back of class and gave lecture with solving mathematical problems. Teacher asked question to student and student did not ask the question even though they are confused. Teacher tried to keep pupils silent and wanted to give attention of solution of mathematical problem and answer the question only when teacher asked them to do so. My observation showed that they seldom asked questions, especially indicating the talent pupils who were sitting in the front bench. Most of the students were present in classroom continuously. They were rarely absent in classroom, teacher was like a military commander. His directions must be followed by the students. There were no activities like learning by doing. But student could solve easily the related problems as the same of teacher- solved problem, which was given by teacher as class work.

The main aim of school and teacher is to active students to learn. In observation of classroom, most of the classroom was uncomfortable. Interview showed that students were interested in game and favorite teacher who gave them freedom and opportunity that needs student participation. Student rarely question to teacher but they answered frequently when teacher questioned them. They were regular in class and strictly followed the direction of the teacher. They were always passive listeners full of fear and tensions. They always cared that whether they are mistakes or missed the rule of school. They did not feel secured in class and class was like a jail. Students wanted to be free from fearing and monotonous situation. Most of the students were not done and checking homework and class work some of them were copying the solution of mathematical problems.

Teacher wanted them to obey him and solved the related problem. Teacher wanted his question to be answered and all keep quiet and

listening and looking as a one-sided interaction of teacher. He also wanted students to do the works, which he ordered. Teacher's interview indicated that they were using different activities in teaching mathematics to enhance the pupil's participation. They said that sometimes they used teaching material according to the demand of topic, like chart, boxes, other geometrical shape and active participation by asking question, formula and giving problem to solve. These kinds of view gave that teachers had general concept about pupil's participation in the classroom activities. If there is good participation of the students in classroom then there is democracy in classroom. In this context, Piaget's (1896) constructivism knowledge were not constructed and against of Burner's (1960), Upadhayay (2004) the construction theorem.

### 5.3 Interaction with Teacher and among Students

For interaction with teacher and among students, sharing view interest, problem and problem solving process are included. The score of following table is the sum of four schools as frequently = 3, sometime =2 and not-used = 1.

**Table 3: Interaction**

Participation of children	observation	students interview	teacher interview
- Sharing View	5	5	7
- Sharing interest	4	6	8
- Sharing problem	7	8	8
- In problem solving process	8	8	11

The Following arguments also come through student's interview:

- ) "We do not discuss with each other about the study and frequently confused problem".

- ) "If we talk at the time of teaching with friends then teacher punishes us."
- ) "We rarely share the problems with teacher and friends".
- ) "In problem solving process, teacher discusses with us".

These arguments and the above table indicated the following discussion.

Information were observed from the observation from in interaction between teacher vs student and students vs student with sharing interest, view, problems, and in learning process. The interaction between teacher and students was found extremely limited. This was only way because teachers ordered pupils to keep quiet while he was teaching. Teacher did not listen to pupils' responses. Teachers were not giving attention towards the different learning theories such as motivation, reinforcement and evaluation in the most of the observed classes.

Piaget (1896) focused on self- activities of the child which is main base of learning. There was very often one-way communication and teacher dominated the communication. Students could not interact freedom with the teacher as she/he controlled them. There was not freedom to interact between students but there was rarely sharing problems with each other (teacher and student). There was a complete prohibition for the students to share their interests the views each other or with the teacher. But in problem solving process of mathematics, teacher did questioning in different steps of solution. Some important steps were clearly defined with discussion. So, a little satisfactory in interaction was that there was questioning and discussing in problem solving process when teacher solved the mathematical problem on black board.

Teaching -learning activities were mainly teacher centered and students rarely interact among themselves. Powerful teacher and curriculum nature of mathematics did not give the chance of interaction between them (students). Observed data indicated that students shared interests, problems and knowledge with their friends during the absence of

the teacher. From the interview of students they said that they never discussed with friends and teacher during teacher's presence in classroom. Students were asking question at the last of the period, which they felt left confused. They hardly consulted their friends even if they were in trouble. This showed there was lack of co-operation between students. It is against the democratic ideal as defined by Horne (1978).

In primary level classroom, there was teacher- to- child one way of interaction. The only question that teacher asked student in mathematics was to solve certain problem to the students. They did not get any opportunity for sharing their experiences and interacting among themselves, student had either to write or to listen to the teacher.

#### **5.4 Facilitation and Self-Governance**

Students have to encourage learning with autonomy, co-operation, decision making, shared responsibility and accountability with facilitating the concept.

The following table shows the scores of the indicators which was drawn through observation, student and teacher interview. Scores of table are the sum of four school as frequently = 3, sometime = 2 and not used =1.

**Table 4: Facilitation and Self-Governance**

Facilitating and Self Governance	Observation	Students interview	Teacher interview
- Making easy in concept/ step by teacher	8	8	10
- Co-operation	8	10	9
- Decision making	4	5	6
- Shared responsibility	8	8	11
- Accountability	9	10	9
- Leadership/ Grouping	10	11	11

The following arguments were also obtained through student interview:

- ) "Sometimes teacher used different teaching materials and repeats for difficult step of problems".
- ) "We are ready to help each other regarding own problems."
- ) "Teacher decides everything in classroom."
- ) "We take more responsibility and accountability in groups works of work given by teacher."
- ) "We run every activity inside the classroom at the absence of teacher under the leadership of monitor."

These statements of students and the above table provide the following discussions.

Observation was focused on facilitating the learning and classroom governance. How the teacher facilitates the concept the step of mathematical subject matter was observed. Teachers tried to clarify facilitation in difficult step where student got stuck while solving problem. Some students didn't want to ask for the help from teacher. Mostly teacher helped them in making easy the mathematical concepts and difficult steps of solving problem. Teacher was questioning again and again during the period and gave class work. He helped in confusing difficult mode through these ways.

There was co-operation between teacher and student and among students. Student was encouraged to help the teacher but rather co-operative between student themselves. There was not role of student in making decision about classroom activities. Teacher saying was the rule and conveyed that sincerely because students feared of punishment. Teaching method, topic and other activities were chosen only by teacher.

There were groups in classroom, which was divided by teacher. Students were responsible and took accountability in work, which was given by teacher. All the students had done homework and class work, at least they had finished even if their works were incorrect. To do something

is better than to do nothing. In this case, students seemed careful and honest in doing the class work. There was a fear and tension of punishment in student. So student took responsibility and accountability. There were one/two class leaders were run with class monitor (leader) decision only when the absence of teacher.

Information from interview with students was supported by my observation. They helped teacher in classroom activities, they asked the teacher in difficulty of solution and concept. Students were treated like object in making decision about classroom practice. They shared responsibility with each other and took accountability in any group work. They were very responsible to the group leader of class monitor. Teacher responded clearly that the used punishment as a last tool but in reality it might be their only tool to control the classes because the students seemed to be very much afraid of them. Teachers also agreed that decision -making was done by them only because children of primary level cannot decide themselves. He also agreed that there was governance through fear and punishment. This situation matches with the Halt (1997) arguments that "even the kindest and gentlest of schools, children are afraid, many of them a great deal of time: some of them almost all the time. This is a hard fact of life to deal with. What can we do about it?" Dienes (Upadhyay, 2004) defined a teacher is as a facilitator more than exposition" also students' role must be responsible for his own learning. There was not suitable governance in school.

## **5.5 Equal Opportunity and Individual Difference**

There are individual, intellectual and ability differences even among the children from the same group. The teacher teaches the same thing in the same way to all children in a class regardless of their differences in age, sex, ability level, learning speed interest and other backgrounds.

The following table shows that the sum scores of 4 different schools as frequently = 3, sometime = 2 and not- used = 1 mark.

**Table 5: Equal Opportunity and Individual Difference**

Equal opportunity and individual difference	observation	students interview	teacher interview
- In questioning	9	10	12
- In material using	4	7	10
- Giving in opportunities (According to individual difference)	6	7	11
- In other learning process	8	8	10

The following arguments were also come through students' interviews:

- ) "Teacher raised the questions randomly and focus to the poor achiever."
- ) "Teacher punishes us not all the time according to our mistakes."
- ) "Sometime use teaching material but these are insufficient."
- ) "Teacher does not give any opportunities to gifted student."
- ) "Teacher helps equally in difficult process to us."

From above table and statements of students, the following discussion can be given.

In observation and interview I found every child in a particular grade had to learn the same subject matter at the same time with similar speed. If one were not able to do that s/he would be punished and forced to follow the class rather than trying to identify the reason and their solutions.

There were no sufficient opportunities to develop the ability according to individual differences. Then the children were not motivated to learning and kill curiosity and ability of the student.

There was little satisfactory in equality in questioning to the students. Teachers asked questions randomly and focused on weak students; sometime he asked questions to weak and talent according as difficulty of question. Teachers used textbook, chalk; duster as daily uses instructional materials. There were lacks of adequate readymade materials

and teacher made instructional materials were not found. But interview from teacher and student did not match the observed information. They said that sometimes they used teaching materials according to the topic of mathematics. Charts, Boxes and other solid teaching materials were used to clear the concepts. But the materials which were used by teacher was so insufficient. All the students did not use charts equally. There was little satisfactory in giving equal opportunity in other learning process of mathematical problems. Teacher helped equally in different steps according to the ability of different students solving problems. In some classes, there were over crowded classes and large number of students. There was impossible to give the equal opportunity according as individual difference whether teacher said that he gave equal opportunity. Hence, in every activity and in every learning process, there was discrimination in more of the observed class.

Dienes (Upadhyay, 2004) described that classroom lesson should applied for clarifying the individual difference. He also argued that teaching learning activities should be done in small groups. Because it is impossible of readiness of all children for same time and experiences.

Bruner (Pandit 2054 BS) states "obviously, all student- gifted and average alike-should be provided with an excellent education so that they can acquire lasting interest in intellectually stimulating subjects." Saxena (2001) has defined that provision of equal opportunities and individual differences are the indicators of democratic classroom.

Hence above theory strengthens for equal opportunities and individual difference in teaching learning activities. But the study showed that there were no such opportunities to develop the ability and skills according to the individual difference.

## **5.6 Democratic Method of Teaching**

Different types of method can used to observe the democratic method of teaching but in my observation, teacher and student interview



only few are used. The following table indicated the methods that are used in my study.

The scores of table are the sum value of four schools as frequently = 3, sometime = 2 and not- used = 1 mark.

**Table 6: Democratic Method of Teaching**

Democratic Method	observation	students interview	teacher interview
- Play way method			
- Heuristic Method			
- Discovery Method			
- Group Discussion Method		5	6
- Experimental Method	6	8	8
- Demonstration Method			
- Problem Solving Method	12	12	12
- Inductive Method			5

The following statements were also obtained through student interview:

- ) "Teacher solve the examples and problems them he gives the related problem to solve to us."
- ) "Teacher discusses with us when solving the problem."
- ) "Sometime teacher gives teaching materials to us like chart, boxes and geometrical shapes."
- ) "We solve the problems of text book only."

Hence from the above table and statements of student, I discussed the following:

Most of the teachers of primary level are using traditional teacher centered approach (NCED 1998 'b'). The information collected from the observation revealed that teachers were highly dependent on the problem solving method in mathematics teaching. Teachers were blindly using textbooks and explained the students that rules and method of solving

problem had to be rote. Teacher solved the problems and told them (student) to solve the next problem by using the rules and method. But student could not tell that what they learn. Students did not understand that why this technique uses to solve the problem is there any other method to solve? Students had only the rules and method or technique to solve the problem which teacher gave them. The observation showed that the teachers were authoritative and students were always passive and frightened. There was pedagogical domination and teacher's activities seemed to be interfering rather than facilitating learning. Deductive approach and classical problem solving method were used to impart the teacher's knowledge. Teacher and teaching was only memorization of rules and method of solve the mathematical problems and student were mathematical problem solving person.

The pupils were found sitting peacefully in their seats without having opportunity to interact in democratic way. There was domination of content over learning process and teaching methods. Students had to fully depend on the teachers and teachers were grossly dependent on the textbook. Most of the teachers wanted student to memorize the lesson. This seemed there was rote learning and totally lack of creativity and discovery learning. The students did not know how to apply the knowledge and skill in daily life. That situation also dominated the logical power, thinking power and problem solving power in mathematical point of view. The student's interview also showed that there were sometime discussions on classroom according to the topic and rarely used experiment method, which is a must in geometry. But the teacher interview indicated that they used the method according to the nature of the course, like discussion, experiment, discovery and inductive method.

The above situation did not matched the theory of Piaget (1896) where his concerned on how child can learn mathematics and what to teach in which situation is very important rather than how to learn mathematics. According to his theory, children are actively engaged in constructing their

actions and the result of their actions that they make as much sense of that environment as they can. As more information comes their way, they absorb it and regulate their subsequent action accordingly. So his theory has been taken to advocate discovery and activity methods as being most likely to encourage young children's learning in which their active participation and democracy are naturally strengthened. So, a founded method of teaching mathematics at primary level was so different.

Bruner (1960) also supports the discovery teaching method for increase the intellectual potency, shifted from extrinsic to intrinsic reward, aid to memory processing and opportunity to learn the working heuristic of discovery. The finding of method from the research also not matches with this theory. So, methods of teaching at primary level were not so satisfactory.

## 5.7 Social Activities

Bookish and academic activities are not over emphasized in democratic classroom practice. There must be proper attention to social cultural and co-curricular activities so that children develop in a wholesome way and gain more and more social experiences.

The following table has the scores of sub-indicators. Scores are the sum of four schools as frequently = 3, sometime = 2 and not- used = 1 mark.

**Table 7: Social Activities**

Social Activities	observation	students interview	teacher interview
- Social Activities	4	8	8
- Cultural Activities	4	8	8
- Co-curricular Activities	5	11	11
- Clearing	10	12	12

The following statements come through student's interview:

- ) "Sometime we take part competition like sports. Quiz, singing, dancing, spelling context."
- ) "We take part in 'Dausi Bhailo' and 'Jatra' at the time of these festivals."
- ) "We don't take part on other social activities."
- ) "We always keep our classroom and ground neat and tidy."

Hence the above table and statements were discussed in the following way.

Observation found that there was a lack of social activities. The classroom climate was totally dominated by teacher. Teacher saw, as if he knew the all exercise of mathematics textbook. He never organized the social activities like participation in extra activities, interaction and discussion session. There were no cultural and co-curricular activities, which have to organize by school and teacher. But there was little satisfaction in the activities of neat and clean the classroom and ground.

According to students and teaches interview curricular activities were continuously done rather than social and cultural activities. Primary schools are mainly limited in on one type of society and little number of castes, Student and teacher were participated sometime in social activities like programmes on people's health, senses and other developmental tasks. Sometime schools organized local cultural programmes, like classical song and dance, Jatra, 'Deusi Bhaili" etc. They were continuously organized the co-curricular activities according to yearly calendar on some school, some were organized on Friday. Co-curricular activities were like quiz, context, spelling contest, dance and song competition, essay, poem, drawing and other sports contests. Some schools had library and sports ground and most have playing materials like ball, ring, 'dori', carom board, 'ping', slide board etc. Students of primary level had not got more chance in playing ball, ring, carom etc. rather than higher level students. They went library sometime in

interval. Moreover they keep classroom tidy according to student worktable.

This situation suggests the idea that there were no sufficient social activities in schools, which was introduced by Saxena (2001). He advocated the role of social activities in democratic classroom practice as proper attention is paid to social, cultural and co-curricular activities. So that children can develop in a wholesome way and gain more and more social experience. Piaget (1896) also propounded the theory of learning mathematics in experiences through society, experiences through society, experience through physical objects and maturation with adding equilibration (Upadhyay, 2004). Co-operation, competition, respecting behavior and language can be achieved through experiences of social activities. Hence social activities found through the research were not satisfactory.

## **5.8 Aspects of Democracy in Classroom Practice**

Democracy in classroom practice is related to active participation, power sharing, fraternity, freedom, interaction and equal opportunity for learning activities as opposed to representation. Horne (1978) defined it as a way of living in which we collectively deliberate over our shared problems and prospects.

Researchers also attempted to identify the aspects of democratic classroom practices for that what kind of democratic classroom were managed by teachers in their teaching learning activities. Interview has been taken from teachers to find their view or situation of democratic classroom practice and observation also helped to identify the aspect of democracy in classroom practice.

Most of the teacher had general idea of democratic classroom practice. I found satisfactory answer about aspects on democratic classroom practice from teacher's side. Teacher's saying and doing activities in the classroom did not match identically. There was lack of

democracy in their classroom respondents did not able to express their views more specifically in planned way. Teacher's reported that they could not adopt appropriate democratic classroom practice because of the lack of teaching materials, and physical facilities, crowded class size and load of teaching.

To fulfill the objectives, two questions were asked first knowledge of teachers about democracy in classroom and next factors of democracy in classroom practice. Respondent (rural area) A said "democracy in classroom practice is that class where equal behavior to all children, teaching behavioral subject, listening the problem of student and availability of instructional materials. He also added there must be sufficient physical facilities, instructional materials, active participation of teacher and student and discipline are the key factor of democracy in classroom practice.

Respondent (rural area) B said that democracy in classroom means there is freely interaction in learning and confidently learning environment in a classroom. There must be child centered behavior and teaching method and absence of negative activities in children mentality, are the main factors of democracy in classroom.

Respondent (Urban area) C expressed their view about democracy in classroom that the state of right to question freely (by students) and duty to answer (by teacher) without any excuse, along with adequate teaching materials. He also added active participation of students, biasness teacher, sufficient teaching materials and child centered teaching method and reliable evaluation is the components of democracy in classroom practice.

Respondent D (urban area) said that in the democracy in classroom practice, there is participation if all students, open teaching learning environment, equality in question answer and continuous evaluation. Main factors in democracy in classroom practice are active participation of students' adequate teaching materials, proper seating arrangement better environment of interaction equality in checking homework and class work and more focus on weak students.

The above mentioned views and observation indicated that democracy in classroom practice means active participation of students, freedom in teaching learning activities, interaction about learning topic, equality in behavior and opportunity, availability sufficient teaching materials and continuous evaluations in classroom.

Similarly the main factors, which are necessary for the democracy for the democracy in classroom practice, are- sufficient physical and teaching materials, active participation of students, child-centered teaching method interaction and equality according to individual difference and biasness evaluation.

### **5.9 Factors Hindering Democracy in Classroom Practice**

Researcher tried to investigate the factors, which hinder in making good democracy in classroom practice. For this, different questions were asked to the respondent. In response to the question all of the respondents stressed on to make democracy in their classroom practice but there were lack of teaching materials and physical facilities, crowded and lots of student in classroom and lack of student-teacher-parent relationship. Moreover respondent A added economics factor load of period of a teacher, lack of trainings and textbook without student oriented activities are also hindering factor for the democratic practice in the classroom. Similarly respondent B side the effecting factors more than above were bias behavior of teacher, carelessness of school management and parents, and lack of trained, teacher, which made autocratic classroom practice instead of democratic. Next respondent C said that the factors like biased evaluation, lack of supervision, traditional teaching method, absence of parents in school, and uncontrolled classroom were the hindering factors of democracy in classroom practice, which were more than above mentioned factors.

Respondents stated the most of the teachers were not satisfied with their job because of insecurity, lack of sufficient salary and the absence of

prestige of teaching, profession in the society. Though teaching is the noblest profession of all, it has unfortunately, least status in the Nepali society, which has psychologically discouraged the teachers for their better performance in classroom teaching. Apart from this, absence of peaceful environment, massive indifference of school management committee towards the academic, activities of school, lack of the culture of discipline in families are some of the (out of many more) hindering factors in democracy in classroom practice.

Hence the above expressed realities and observation also indicated that there were lots of factors, which negatively effect on democracy in classroom practice. Main hindering factors were lack of relevant teaching materials and physical facilities, overcrowded pupils in class, lack of relationship between teacher student- parents, classical teaching methods, and textbook without student oriented activities, irrelevancy of curriculum, untrained teacher, supervisors' negligence, school management and parents, and hesitation over teaching profession. Some other were based and irresponsible teacher, lack of supervision by head teacher, school inspector supervisors, parents and paper limited rules and regulations strictly banded the door of the democracy in classroom practice. And the whole one factor was great understanding gap of meaning, importance and need of democratic classroom practice to all of the teachers, students, parents and related persons.



## **CHAPTER - 6**

### **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

The main purpose of the study was to examine the democratic approach in classroom practice in mathematics teaching at primary level. This study also seeks to identify the different aspects and hindering factors of democracy in classroom practice because of the lack of significant study in this area.

#### **6.1 Summary of the Findings**

From the study reports and data collected through observation of classroom and interview with respondents, it was found that in public primary school classrooms, teacher and students did not provide conditions for effective learning of students. The study had examined the indicators of democracy in classroom practice, The following are the indicators of democracy in classroom practice.

1. Right of the children
2. Participation
3. Interaction
4. Facilitation and self-government
5. Equal Opportunity and Individual Difference
6. Democratic Method of Teaching
7. Social Activities

There was full control on the rights of the child. Freedom of interaction, self-initiation, follow of ideas and social relations were not satisfactory. Teachers were authoritative and dominator, students kept quiet in class and passive and they were frightened with punishment. The justice which given by the teacher to the students was as a person there was equality in giving information but not in opportunity, power sharing, reward and punishment and the classrooms were run through teacher's autonomy with bookish knowledge.

There was low participation of the child in all classes. Problem solving method with classical approach were used, there were no questioning from the students but they had to solve the related problem questioning from the students but they had to solve the related problem teacher was like a military commander whose directions were fully followed and answer the teacher's question by student. Students were not identified themselves with teaching learning activities and learning by doing in classroom which was described by Piaget (1896).

Interaction between teachers and students and among the students themselves was very rare. There were no sharing view and interest of the student, but sometime in problem and problem solving process in mathematics. There was teacher- to- student one-way interaction in primary level.

Teacher facilitated the learning mainly and step or concept of mathematical topic with rarely using teaching materials. Co-operation between teacher and student and among student was rather seen, mainly by students to teacher. Students were like object in decision- making. Students took responsible and accountability in work/group work given by teacher. There was one/two class leader in each classroom to manage the class activities in the absence of teacher. So there was governance through fear and punishment.

There was a little satisfaction in giving equal opportunity in questioning and learning process, there was rarely use of teaching materials and most of them were insufficient in the crowded class. There were no such opportunities to develop the ability and skill according to the individual difference.

Most of the teacher of primary level are using traditional teacher centered mainly problem solving method in teaching mathematics. Students rote rules and method and solved the problem according to these. They rarely used experiment, discussion and lecture method.

Teachers of primary level always should seek to solve all mathematics problems by students. Such social activities were not done by teacher in school, which develop the extracurricular, social and cultural knowledge. They rarely organized sports, quiz, etc competition and other social works.

Democracy in classroom practice means there are active participation, power sharing, fraternity, freedom interaction and equal opportunity in classroom for teaching learning activities. Teachers were well known about classroom and democracy in it. The classroom where equal behavior to all children, sufficient teaching materials and physical facilities, active participation of the students, freely interaction in learning, child-centered teaching method, equal opportunities in teaching learning activities them that class is considered as a democratic classroom practice. Main factors for democracy in classroom practice and physical facilities, sufficient teaching material, active participation of students, child centered teaching method, interaction and equality according to individual differences.

The hindering factors for good democracy in classroom practice are lack of teaching materials and physical facilities, crowded class, lack of student- teacher- parent relationship, activity less curriculum, over loaded class of teacher, biased teacher's attitude, lack of supervision and inspection, untrained teacher and classical teaching method.

## **6.2 Conclusion of the Study**

Democracy means active participation, which is an important part of human life. Mathematics is way of thinking, organizing, analyzing and synthesizing a body of knowledge. So mathematics learning depends upon active participation, creativity, discovery and interaction. Democracy and classroom practice are necessary parts in active participation of students for meaningful learning. Democratic classroom practice has its own indicators as right of the child participation of the child, interaction, facilitation and

self government equal opportunity and individual difference, democratic method of teaching, and social activities. These indicators were used for the research on democracy in classroom practice in teaching mathematics at primary level. It concludes that there are dominated child right and students as like a passive listener and teacher as like a military commander there are teacher centered methods with teacher to child one-way interaction in teaching mathematics at primary level. There is governance through fear and punishment in classes and carelessness in giving opportunities of equality and equity, competitions and social activities.

Some of the aspects of democracy in classroom practice are active participation, power sharing, fraternity, freedom, interaction and equal opportunities in teaching mathematics in classroom practice. Very poor aspects were come through the teacher's view. Mathematics teacher of primary level can give most of the factors which are needed for the democratic classroom practice like as physical facilities, teaching materials, active participation of the child, child entered teaching method, interaction and equality.

Hindering factors for good democracy in classroom practice in Nepal, are lack of teaching materials and physical facilities, crowded class, lack of student- teacher- parents relationship, activities less curriculum, unknown about democratic teaching method and lack of supervision and inspiration. These factors are the effecting factors for meaning full learning through democratic approaches.

Hence, it can be concluded that we are not exercising democratic practice in mathematics classroom at primary level but we are having exercising authoritative, autocratic and monopoly of teachers.

### **6.3 Recommendations for Further Improvement**

The research made on the above discussion indicated that there is autocracy in classroom practice, which is formed by different factors. This indicates an urgent need to identity the causes/ factors and their solutions in

order to achieve the desired goals and objectives of mathematics. Some of the recommendations for the further improvement are as following.

- ) This study shows that classroom life of primary school is painful and unpleasant like a jail. The classroom space was so narrow and congested in terms of seating arrangement. So, the terrifying situation needs to be replaced by a pleasant and cozy situation i.e. self- discipline through love and affection to maintain democracy in classroom practice.
- ) The dominance of autocratic, authoritative, teacher-centered and tradition teaching styles need to be replaced by democratic, autonomous, child-centered and scientific way of facilitation strengthening participatory approaches by solving social, culture, structural and technical problems prevailing in the life of classroom.
- ) There is lack of student oriented actives applicable in daily life situation in textbook. So, there should be some efforts to contents of primary mathematics comprising the provision of group works.
- ) It is largely believed that teaching materials help in understanding abstract and difficult mathematical concepts but these materials are lacking. So, there is a dire need to provide adequate teaching materials and physical facilities.
- ) Most of the teachers use traditional method of teaching mathematics. So, it is needed to change the method of teaching as excepted national objectives of primary level. So, child-centered discovery, experimental, heuristic, and inductive and play-way method will be suitable for teaching mathematics at primary level which supports the democratic approach of classroom practice.
- ) There is lack of supervision and inspection of teacher in primary level. So, there is necessary to strengthen regular and transparent teacher performance evaluation system.
- ) Most of the teachers are unaware about democratic classroom practice and its importance for the teaching learning activities. So

teachers have to be given such type of training. So that they can adapt democratic approach in classroom practice.

- ) Teacher-child-parent relationship is poor which makes the teaching learning activities unsuccessful. So, there is an essential to make friendly relationship between teacher, child and parent.
- ) All the schools should be preserving the rights of child, which they have to get, from the school.
- ) There should be inclusion of democratic methods relevant teaching materials, group works, opportunities of participations interaction, facilitation, self-governance and co-curricular activities in teacher's guide and easily available it in all school.

#### **6.4 Recommendation for the Further Research**

Most of the teachers are trained and well known about method and subject matter but the entire teacher used traditional teaching methods and most of the students did feel mathematics as hard subject. This is the area of democracy not only as political perceptual, but also in the practical life along with receiving education. This 21<sup>st</sup> century also demands freedom, participation, interaction and facilitation everywhere. It is suggested to have further research that why teacher do not follow the intended method and materials in teaching mathematic at primary level, Suggestion are given below in concise form.

- ) The study was conducted using small sample thus the finding of the study could not be generalize in the broad sense. Thus, it would be more valuable if the study would be done with covering broad areas.
- ) This study is limited only in some indicators of democracy in classroom practice but democracy has lots of indicators. So, this could be very important if the research would be taken broad area of democracy in classroom practice.
- ) It must be needed the research on relevancy of democratic classroom practice in primary level so that how much extent in this way.

## BIBLIOGRAPHY

- Bell, H. (1978). *Teaching and learning mathematics*, USA: W.M.C. Brown Company Publishers.
- Best, J.W. & Kahn, J.V. (1999). *Research in education* (7<sup>th</sup> ed.), New Delhi: Prentice Hall of India.
- Bhatia, B. D. & Bhatia, Kamala (1986). *The principles and method of teaching*, Delhi: Doaba House Book Sheller and Publisher.
- Bourdieu, P. (1998). *Practical reason: On the theory of action*. Cambridge: Cambridge University Press.
- CDC. (1992). *Primary education curriculum*, Sanothimi: His Majesty's Government, Ministry of Education.
- CERID. (2002). *Effectiveness study of teacher training* (Study Report), Kathmandu: NCED.
- CWIN (2001 a). *Child act 1991, child regulation 1994 and child labour act 2000*. Kathmandu.
- CWIN (2001, b). *The state if the rights of the child in Nepal 2000*. Kathmandu.
- Dewey, J. (1940). *Democracy in education*, New York: G.P. Putnam's Son.
- Eves, Howard. (1983). *An introduction to history of mathematics*, Fifth Edition, Saunder's College Publishing.
- Freire, P. (1990). *Pedagogy of the apprised*, New York: Continues.
- Hopkins, D. (1998). *A teacher's guide to classroom research*, Bucking Ham Open University Press.
- Karki, B. K. (2001). *A study on classroom practices in the primary schools of Nepal in relation to the environmental education* (an Unpublished Dissertation) Denmark: DUE.
- Karmacharya, B. N. (2001). *Democracy in classroom practice in the primary schools of Nepal* (An Unpublished Dissertation), Denmark: DUE.

- Kerlinger. F. N. (1993) *Foundation of behavioral research*. (2<sup>nd</sup> ed.), New Delhi: Surjeet Publication.
- Khanal, P. (2003). *Educational research*, Kathmandu: Students' Books Publishers and Distributors, Kirtipur, Nepal.
- Maharjan, H. B., Upadhyay, H. N., Poudel, L. N. (2058). *Teaching mathematics in secondary school*, Kathmandu: Bhudi Puran Prakashan, Nepal.
- MITRA. (2001). *A study on teaching materials and subject wise classroom observation*, Kathmandu: RDSDE.
- NCED. (1998b). *Effects of the training programme on classroom practice*, Kathmandu: Sanothimi.
- NCED. (2000) *Training of teachers: factors contributing to the effectiveness of training in classroom practice*, Kathmandu: Sanothimi.
- Neupane, R. C. (2001). *A study on the effective of play method in mathematics teaching at primary level* (An Unpublished Dissertation), T.U., Nepal.
- Pandit, R. P. (1997). *Teaching mathematics*, Kathmandu: Ananta Prakashan, Nepal.
- Save the Children Alliance. (2002). *Child rights programming*, Nepal: International Save the Children Alliance.
- Saxena, N. R. (2001). *The theory of education*, Delhi: Surya Publication.
- Shrestha, S. K. (1979). *A Study to compare the effectiveness of the inquiry method verses the traditional method of teaching mathematics in a selected elementary class of Nepal*, (An Unpublished Dissertation) Southern, Illinois University, USA.
- Upadhyay, H. P. (2004). *Teaching mathematics*, Kathmandu: Ratna Pustak Bhandar, Nepal
- Upadhyay, H. P. (2003). *Thesis abstract*, Kathmandu: Kshitiz Prakashan



## APPENDIX-A

### Classroom Observation Form

**School:**  
**Grade:**  
**Teacher**  
**Subject**

**Date:**  
**Period:**  
**No. of Students:**  
**Title**

*Frequently=3, Sometimes=2, Not-used=1*

Indicators	Observation	Interview		Remarks
		Students	Teacher	
<b>1. Right of the child</b>				
A. Freedom				
- Interaction				
- Self initiation				
- Flow of ideas				
- Social relations				
B. justice				
- Dealing Child as person				
- As object				
C. Equality				
- Opportunity				
- Power sharing				
- Reward				
- Punishment				
- Giving Information				
D. Autonomous class				
E. Others				
<b>2. Participation of the Child</b>				
- Ask question relevantly				
- Answer teacher's question				
- Participate in the classroom				
- Follow of directions				
- Learning by doing activity				
- Solving related problem				
- Other activities				
<b>3. Iteration</b>				
- Sharing view				
- Sharing interest				
- Sharing problems				
- Others				
<b>4. Facilities and Self-Government</b>				
- Making easy in Concept by teacher				
- Cooperation				
- Decision making				
- Shared responsibility				
- Accountability				
- Other				
<b>5. Equal Opportunity and Individual Difference</b>				
- In questioning				

- Material Using			
- Giving opportunities (According to individual difference)			
- In other learning process			
<b>6. Right of the child</b>			
- Play-way method			
- Heuristic method			
- Discovery method			
- Group discussion method			
- Experimental method			
- Demonstration method			
- Problem solving method			
- Other methods			
<b>7. Social Activities</b>			
- Social activities			
- Cultural activities			
- Co-curricular activities			
- Others			

## **APPENDIX-B**

### **Guidelines for Interview with Teachers**

1. What are the strong and weak areas of classroom practice in the primary school of Nepal?
2. What do you mean by democracy in classroom practice?
3. What are the factors needed for a good democratic classroom?
4. What are the factors, which hinders for democracy of classroom practice?
5. Do you think that your classroom practice is democratic? If yes, how? If not, why?
6. What are the different aspects of democracy in classroom practice? (Student, teacher, textbook, instructional materials etc.)
7. Other comments about democracy in classroom practice. (If any)

## **APPENDIX-C**

### **Guidelines for Interview with Students**

1. Do you like to come to school? Why do you come to school?
2. Can you mention the things you want to do but not allowed in the school?
3. What things and activities are boring and charming in school?
4. What kind of problems comes in classroom? Can you help each other in ones problem?
5. Do you solve only the problems given by teacher or more than that?
6. Does the teacher asked more to someone? If yes why?
7. How will you be clear about confusion question? (Frequently asked/ rarely asked/ not asked to the teacher?)
8. Are you listening teacher only or you say something? Do you obey the teacher?
9. Who is rapid learner? Why he becomes rapid?
10. How do you interact with your friends in class?
11. Who decide what to learn/teach or how and whom to learn/teach?
12. Who is class monitor? How you follow him?
13. Who get more punishment from teacher? Why he get?
14. What type of activities you have to do (do's and don'ts) in the classroom?
15. Do you apply the knowledge and skills that you learn in the class in your everyday lives/ at home?
16. Do you sometimes feel like not going to school? Why?
17. How the teacher learns to you a new topic? (Process) Does he discuss with you?
18. What are the co-curricular activities you have to done? When?
19. Who is the teacher that you like most? Why?
20. Does the teacher behave negatively to you? If so, what kind of behave?
21. Can you say the things, which are needed for a good classroom (classroom practice)?
22. Other comment about classroom practice (If any).

# APPENDIX-D

## Data Analysis Sheet

Respondents Research Questions	Respondents A	Respondents B	Respondents C	Respondents D	Remarks