

**FACTORS AFFECTING ON MATHEMATICS ACHIEVEMENT OF
GRADE NINE STUDENTS**

**A
THESIS
BY
RAMESH JAISHI**

**IN THE PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE
DEGREE OF MASTER OF EDUCATION**

**SUBMITTED
TO
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LETTER OF CERTIFICATE

This is to certify that Mr. Ramesh Jaishi is student of academic year 2072/073 with campus Roll number:600, thesis number 1445, Exam Roll Number : 7228371 (2075) and TU registration number 9-2-57-945-2011 has completed this thesis for the period prescribed by the rules and regulation of Tribhuvan University, Nepal. This thesis entitled "Factors affecting on mathematics achievement of Grade nine students at achham district" has been prepared based on the results of his investigation. I, hereby recommend and forward that her thesis be submitted for the evaluation as the partial requirement to award the degree of Master of Education.

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Prof. Dr. Bed Raj Acharya

Date 28 February 2022

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RECOMMENDATION FOR ACCEPTANCE

This is to certify the Mr. Ramesh Jaishi has completed his M.Ed. thesis entitled 'Factors affecting on mathematics achievement of Grade nine students at achham district' Under my supervision during the period prescribed the rules and regulations of Tribhuvan University, Kirtipur, Kathmandu, Nepal. I recommended and forward his thesis to the Department of Mathematics Education to organized final Viva voce.

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LETTER OF APPROVAL

This thesis entitled "Factors affecting on mathematics achievement of Grade nine students at achham district" submitted by Mr. Ramesh Jaishi in partial fulfillment of the requirements for the Master Degree in Education has been approved.

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DECLARATION

This dissertation contains no materials which have been accepted for the award of another degree in any institutions. To the best of knowledge and belief this dissertation contains no materials previous published by any authors except due acknowledgement has been made.

.....

Ramesh Jaishi

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ABSTRACT

The study entitled "Factors affecting on mathematics achievement of Grade nine students at achham district" is based on quantative approach. The objecitves of ths study was to find out the factors affecting mathematics achievement of grade nine studetns at Achham district and to analyze the factors affecting on mathematics achievements of the students. Questionnarie and mathematics achievement score were used to collect data. The questionnarie consisting 34 statement which was distributed within 70 students and were requested to fill it. The standard Multiple regression were calculated to fulfil the objectes.

The findings of the study shows that there are many factors affecting on mathematics achieeement of grade nine students

There was not group coordination between and among students. Some students felt themselves superior some other was poor. One or two students were very good with helping behavior. Students were not regular in classroom.

Teacher was capable in academically but they were not using ICT. They were teaching traditionally. Some young teacher was using less ICT. Teachers were not following the modern teaching methods. Similarly, Home environment was not good. They had not separate room to study. They used to sit together.

Students were not interested in mathematics subject. There was traditional teaching strategy therefore students felt bore in their study. Textbook was referred to the government book which was not suitable and enough for practice.

The findings of the study show that parent's education factors is 8.0 % affects on achievement of students. Similarly, home environment affected 14.3 %, interest of learner affected 25.1 % and time schedule affect 8.2 % on achievement of students. hence, all the independent factors are affected on achievement of good score in maths.

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Chapter I

INTRODUCTION

Background of the Study

Mathematics is the branch of science. The directly associated with human being. People cannot spend their regular life without calculation. So it is very important for us. The word mathematics has been derived from the Greek Mathematics means learning of science. It is science of number and space. Then the mathematics of calculating and using process of number. It is one of the major subjects which help to solve daily life. Mathematics may seem a subject of rules, but if you try going deeper into the subject, then you would soon realize that mathematics is rather a subject that can be used as a tool to solve any problem in nature.

Everything can be seen in a mathematical way. According to Renate and Neunzert (2012) mentioned, Aristotle says that Mathematics is the science of quantity. It has been defined as the science of quantity and analysis. In the context of history of mathematics Eves (1983) wrote;

“Within the gradual education of society, simple counting became imperative. A tribe has to know many members it had and how many enemies, and a man found It necessary to know if his flock of sheep was deceasing in size. Probably the earliest way of keeping a count was by some simple tally method, employing the principle of one to one correspondence. In keeping a count on sheep, for example, one finger, per ship could be turned under counts could also be maintained by making collections of pebbles or sticks by making scratches in the dirt Then perhaps later, an assortment of vocal sound was developed as a word tally against the number of objects in a small group. And still later with the refinement of writing an assortment of symbol was devised to stand for these numbers.”

The development of mathematics started from different civilization:

The history of ancient civilization, Babylonian civilization, Egyptian civilization, Roman civilization and Greek civilization. The mathematics is the most importance subject in the school curriculum. Indeed is a fact that more lessons of mathematics are taught in schools than only other subject. In our context mathematics is usually singled out as being a particularly worrying problem. It clear that, there are many countries in the world, Nepal has the great concern which is frequently expressed about attainment in mathematics. Cockcroft says that concern is raised because the whole world regards mathematics as importance and children are expected to demonstrate a high level of competence in the subject (Cockcroft; 1982).

Mathematics is a science of magnitude and number that very useful virtually in all subject areas. The all fields of studies are dependent on it for problem solving and prediction of outcomes. Competency in mathematics learning is vital to any individual and nation in domestic, business deals, scientific discoveries, technological breakthrough, problem solving and decision making in different situations in life. Akinoso (2011) viewed mathematics as the basis for science and technology and tool for achieving scientific and technological development. Despite its great importance, it is the only subject that is most dreaded to learners among all subjects offered in schools (Ashcraft and Faust, 1994; Akinoso, 2011). Students therefore tend to respond to it with less self-confidence, negative feeling and anxiety.

Mathematics is an abstract subject, yet significant for scientific and technological development in any society. Tella (2008;16) remarked, its usefulness in science, mathematical and technological activities as well as commerce, economics education and even humanities is almost at par with the importance of education as a whole. Mathematics is the major part of school curriculum not

only in Nepal but the entire world. Another society has observed mathematics is the basic need of human civilization. It not easy to say when and from where mathematics had started but one can see that mathematics as an essential part of human civilization. It was created to fulfill the daily life. Then the nature and structure of mathematics was built with the development of human civilization and civilization such as Babylonian, Egyptian contributed for the development of mathematics (Guragain; 2001).

The mathematics was invented to fulfill the human needs, which logically study of shape arrangement of quality and many related concepts. Like as, Arithmetic is the calculation, Algebra is the comparing two numbers and geometry is the measuring land. It helps people to understand and interpret very importance quantitative as well as qualitative aspect and nature phenomena. Mathematics is one main subject, taught all over the world in school to university education that is considered as essential for citizens and the usefulness of mathematics it perceived in different. Today world cannot run without mathematics because everybody needs mathematics for daily life and professional life. From the contribution of mathematics for the development of other disciplines, mathematics is taken as the science of all science and art of all arts. It also regarded as queen of all science. Because it is the base of higher study not only in the field of science and technology but also in the fields like as economics, management, industry, psychology etc. So it is also known as the mirror of the civilization.

Mathematics has been accepted as an important component of formal education from accent period to the present day. People have been utilizing mathematics to solve the difficulties arisen due to the natural calamities. Political purpose, economic development planning and other social events can be perceived

from early history of mathematics. Education is the basis for the civilization. It has education the important role to play in all round development of a country. It is economic, social or political life. Education is the backbone for the development of person, country and whole world. This study provides the additional factors which could have an impact on students' achievement such as gender, family structure, parents and students attitude towards school and parent involvement (Campbell, 1998). They are affecting factors of mathematics achievements are divided to sub-factors: demographic factors are gender, social economic status, parent education and cultural diversity etc. Instructional factors are teacher competency, instructional strategy, teaching techniques, curriculum, school context and facilities and individual factors are self-directed learning, motivation, etc. there are several factors those are responsible for mathematics achievements of grade ten students. There are many factors such as; teacher education, teacher personality, home environment, materials, peer group work, parents attitudes, social economic status, parents awareness, students interest, previous knowledge, teacher training, curriculum change, not textbook time to time available, improving supervision system, cultural diversity across nation, religion, language and different zone (Thapa, 2017).

The Secondary Education Examination abbreviated SEE, is the final examination in the secondary school system of Nepal. National Examination Board upgraded from what was previously known as School Leaving Certificate (Nepal or SLC). Every student must take this examination for completing the tenth grade of their study (according to new Education Act) before joining higher secondary level education. The government has a great determination that new grading system that has been recently implemented in their grade ten final examination will help the country to increases the literacy rate. As the new Education Act, 2016 (2073) has been

implemented the SEE will be taken place in grade ten as a national level examination. Therefore, the researcher will be interested to study about the factors affecting on mathematics achievement of students at Achham district.

In Achham, Mathematics is taking as a difficult subject. Psychologically, students are demotivated about this subject. As a researcher of the mathematics, I feel nerves about mathematics situation in my district. Talking about mathematics result, it was too poor. It was happening process from the past and it gives continuity till now. So my concern is to find out the factors, which affecting on mathematics 'result. So it was selected for the research area.

Statement of the Problem

Mathematics is an essential thing for the human life. This study is "Factors affecting on mathematics achievement of Grade nine students at Achham district". There are many diversities in Achham district in respect to social economic, gender biasness, cultural diversity, back warded area, dominated caste etc. The students are getting low achievement in mathematics due to various factors in Achham district. Consequently, it demonstrated a poor learning outcome, low achievement into the participation of the students. The mathematics is a significance part of day to day human life. It is very useful in an official work, household and other field works. Then the every working field people are using mathematics with or without knowing the mathematical concept. The research is conducted student achievement in mathematics in Achham where relatively low and unsatisfactory. The mathematics has emphasized like language, most of students feel that it is a difficult subject and some of students failed mathematics in grade nine. It creates great deal to time, money, effort and manpower of the nation which have been wasted. It is affected by the various factors like home and school environment, physical facilities, attitude

towards the subject, peer group, teaching learning process, etc. We cannot achieve the expected goal without improving appropriately the management of above mentioned factors to facilitate the students learning.

Research Questions

This study sought the answers of the following research questions:

1. What are the factors affecting mathematics achievement of grade nine students?
2. Which factors has more influential role in grade nine for mathematics learning ?

Objectives of the Study

The objectives of the study were be as follows:

1. To find out the factors affecting mathematics achievement of grade nine students at Achham district.
2. To analyze the factors affecting on mathematics achievement of the students.

Justification of the Study

The outcomes of this particular study it proved to be useful and significance resource for mathematics learners as it was open new avenues for effective learning. Further the study was valuable asset for mathematics as well because it reflects the probable modification in the mold of entertainment. Factors affecting on mathematics achievement of grade nine students by connecting to the interesting phenomenon of mathematics result. Moreover it is board the scope of researcher by on incorporating this mathematics phenomenon of factor affecting achievement in various sectors. In addition, the research hope that this research can be help all the readers to develop the study about factor affecting on mathematics this study was some significance as follows.

-) This study was help to identify the problems that might be seemed in mathematics teaching.
-) This study was helpful for the teacher and students to find out the mathematical and psychological problem.
-) This study was help to minimize the failure rate in mathematics.
-) This study was help to find affecting factors of mathematics in the whole country.
-) This study was help curriculum designers and concerned person and focal person.
-) This study was help the government to make write policy and right design.
-) This study was provide the information to the other researcher.

Delimitations of the Study

The delimitations of the study are as follows;

-) This study is limited to three schools of Achham district.
-) This study is only included students, parents and teachers forthe data collection.
-) This study is focuses on grade nine students and their parents as well as respective teachers.
-) This study is done with mixed research.

Operational Definition of the Key Terms

Researcher has defined the most relevant terms related with this study. Some of them are:

Students : It refers to the students of grade nine.

Gender : Gender refers to characteristics, role and occupation between male and female so gender included the social discrimination between boys and girls.

Achievement : In this study of the achievement is defined terms of mathematics score obtained by the students in the achievement test which constructed by the researcher.

Study habits : It refers to usual form or action of a person in studying like regular study, use of vacant time, use of extra- curricular activities time and so on.

Economic condition : Economic condition means representing of family economic condition of students 'family who are studying in grade nine in selected three schools at Achham district in Turmakh and village municipality.

Chapter II

REVIEW OF RELATED LITERATURES

A review of related literature is the knowledge of what has been established, known or studied and what has been attempted yet. To find out an effective research, the researchers are required to related literature, theories, reports, articles, education policies and program that help in conceptualizing the real research on the very topic. It is based on the real experiences and burning issues which have been rising yet. The review of literature is necessarily required to find out gap research for further studies. This chapter was discuss review of previous research and opinion and the interpretative summary of the current state of knowledge in the main areas of the study: social economic, peer group, teaching method, caste, gender, psychology, etc. with respect to mathematics achievement.

Review of Empirical Literature

Marguerite (2002), has conducted a research on “Factor affecting performance at secondary level in Nairobi province of Kenya”. The main objective of this study are to find out the extent to which the following factors contribute to poor performance in mathematics : availability of textbooks; students gender; class size; teaching methods and to identify other significant factors that both teachers and students perceive as influencing poor performance in mathematics in this study. They used a total 46 public schools with at least 6000 secondary public school students. The study used a sample of 570 from two students from ten stratified, randomly selected secondary school and 20 mathematics teacher in the study. This study on the data was triangulated, coded and computer analyzed using SPSS package and analysis of variance (ANOVA) technique was used to test the effect of the factors at each level of cognitive development.

In this way, Ravi (2011) has conducted a research on the topic “The factors affecting performance in mathematics GCE(O/L) examination: The case of KALKUDHA zone”. This study found the demographic factor, instructional factors and individual factors that affected the mathematics performance of students. This was mixed method study. The data was collected in 21 GCE (O/L) school in the KALKUDHA zone. The target population was 993 students. This study focused group interview and data was analyzed using t-test, one-way ANOVA, LSD post-hoc test and Pearson correlation.

Similarly, Kiwanuka, Damme, Noortgate, Anumendem, Namusisi (2015) conducted research on “Factors affecting mathematics achievement of first year secondary school students in central Uganda”. This study explored the sources of variability in mathematics achievement of Ugandan students at the student’s classroom and school level. In this study, they used mathematics score and questioner responses of 4819 first year secondary school students (grade seven, about 14-15 year old) from 78 classrooms of 49 schools were analyzed. They study on three level; students, classroom, and school. The major factors of this study were socio- economic status, gender, prior mathematics achievement, parental support, peer influence, class etc.

In addition, Dimakos, Tyrlis & Spyros (2012), has conducted a research on the topic “Factor that influence students to do mathematics”. The main objective of this study was to study the factors that influence students to do mathematics higher level than the usual level arising from the usual syllabus. In this study of the sample were 339 students who participated at 25th National Mathematical Olympiad in March 2008. This study incorporate questionnaire as a tools. The major finding of study was

mathematics competition, their parents, books and their school teacher as the influencing factors.

In this respects, Chaman (2014) has conducted the study on the topic “Factors influencing mathematics achievement of secondary school students in India. The main objective of this study are investigated how mathematics anxiety, attitude towards mathematics and parental involvement influenced the mathematics achievement of this study and assessed how constructs were inter- related and how gender influenced these relationship. The sample of this study was 9 year -11 year students and their parents from a private school in Kerala. In this study he used questionnaire and achievement test for the research tool. He used mixed design in this study. The major finding of this research was teacher- student’s relationship, teacher competency; peer support, socio- economic status and educational level of parents are affecting factors.

Similarly, Kafle (2012) has conducted the study on the topic “Factors affecting mathematics achievement of adult woman students in SLC examination”. The main objectives were to compare the mathematics achievement of adult woman students in SLC examination and to find out the hindering factors for lower achievement in mathematics of adult woman students. The research based on adult woman schools from Kathmandu valley having a total 39 students and 22 adult woman students. He used interview as data collection tool. The finding of the study was, mathematics achievement of adult women students’ low economic status, educational status of family member, absent of guardian, guardian of occupation, peer group interaction, culture, caste and chronic poorness.

Thapa (2017) has conducted the study on the topic “Factor affecting girl’s achievement in mathematics”. The main objectives were to explore the factor affecting the girl’s achievement in mathematics at secondary level and to identify the

strategies taken by the school administration to improve girl's mathematics achievement. In this study was based on qualitative in case study as well as descriptive nature. This study of the data collection tools were observation, interview and written documents.

This study based on grade IX students, had teacher, parents and mathematics teacher at Dhankuta district. The major finding of the study show that family related factors such as parents education, support of parents, economic status and household, school related factors such as class size, teachers biasness, techniques of teaching materials, personal related factors such as watching TV, playing game, prior achievement and interest of learner and social factor such as male dominated society, social belief, and culture are the main factors affecting on mathematics achievement of girls students.

Budha (2017) has conducted the study on the topic “Factor affecting on mathematics achievement of Tharu students”. In this study major objectives were to find out the affecting factors on low achievement of Tharu students in mathematics and to analysis the effect of the factors on mathematics achievement. This study was used mixed design. The research were data collection tool questionnaire as well as sample five school and analysis data based on Chi-square test in this study at Kailali district. The major finding of this research was parent's education, house workloads, economic condition, prior knowledge, gender, language, school environment, teaching methods, teacher/students intersection, besides and school administration. Which management instruction materials, teaching method as well as experience and teacher trained teacher that played major roles in the mathematics achievement.

Likewise, Mahato(2015) has conducted the study on the topic “Factors affecting the students achievement in optional mathematics at secondary level”. In

this study of the major objectives were to explore the factors that affect the students achievement in optional mathematics and to suggest the possible remedies to the students achievement in optional mathematics. In this study, the researcher selected five school from rural area and five schools from urban areas. In this study were sample selected randomly from each government school of Sarlahi district. The study of the data collection tools were questionnaire, observation and interview schedule.

This study incorporated analysis used percentage; mean weight and χ^2 -value. The major finding were prior knowledge of learner, age factor of learner, interest of learner, illiterate family, lack of motivation, household workload, lack of teaching materials, large number of students in a classroom, assessment system, facilities of library of affecting factors in the study.

Similarly, Dahal(2016) has conducted the study on the topic “Factors affecting mathematics performance of high school students. In this study of the major objectives were to find out relationship between students related factors and to find out the relationship between students mathematical performance and teacher related factors. In this study data collection tools are questionnaire and administrative record in used instruments. The study data analysis Karl- Pearson’s correlation coefficient to identify the relationship between affecting factors and their performance. The researcher used Fisher’s Z-Transformation test at 0.05 level of significance. The major finding of the study on students related factors (interest and study habits) as well as student’s mathematical performance and teacher related factors (personality traits, teaching skills and instructional materials). This researcher used survey on their performance mathematics.

Budhathoki(2016) has conducted the study on the topic “Factors influencing mathematics achievement of Badi students”. The study of main objectives were to

identify the factors that influence in mathematics achievement of Badi students at lower secondary level and to find out the causes of low achievement of Badi students in mathematics at lower secondary level. The used was qualitative research as well as descriptive in nature. The research design is a case study in the study. For this study of the sample are Badi students, parents and teachers and two boys and two girls of public school at grade eight. In this study of the data collection tools were interview and observation.

The major finding of this study were poor economic condition, low parental education, motivation of household works than instructional works irregularity and non-participation of Badi students in classroom activates and less used to students centered methods and used of teaching methods were major influencing factors in mathematics achievement. Further, less parents guidance, counseling, encourage to students social belief, large family size, lack of teaching techniques, negative behaviors of peers and teachers were also played of vital roles as influencing factors in mathematics achievement.

Similarly, Chinaedum (2016) has been carried out a research “Factors affecting student’s interest in mathematics in secondary schools in Enugu state”. The study of main objective was investigated factors affecting Senior Secondary School Students’ Mathematics interest. The factors are student factor, teacher factor, government factor, infrastructural problem, instructional strategy, and class size and mathematics anxiety. Two main instruments (FASMRI and MATHRET) constructed and face-validated were administered to 210 Senior Secondary School one (SSI) Students in the five selected public schools in Enugu and Obollo-Afor Education zones in Enugu State. The reliability coefficient for FASMRI is 0.83 and 0.89 for MATHRET using Split-Half and KR-20/21 procedures respectively. The data

collected were analyzed using Pearson Product- moment correlation statistic and multiple regression analysis technique. Results showed that the seven factors were effective in predicting secondary school students' interest to learn mathematics. More so, teacher factor, student factor, instructional strategy, Mathematics anxiety and infrastructural problem correlate positively with the dependent measure, while class size and government factor correlate negatively with the dependent measure. Nevertheless, the seven factors have significant relative effects on mathematics interest.

It is recommended that government should organize refresher courses for mathematics teachers frequently from which teachers can be equipped with various instructional strategies with which they can use to teach students effectively to enhance their interest for mathematics learning.

Theoretical Review

Vygotsky's new approach to psychology can be traced to both this socio-culture context and this genius like skills of observation and knowledge intersection, supported by a photographic memory, Vygotsky's theory of social constructivism focuses on the artifacts that are created through the social intersections of a group. This study of social intersection plays a significant role in the development of cognition (1978) has study of this "Every function in the child's cultural development appears twice; first on the social level and later on the individual level ;first between people (inter-psychological) and inside the child (inter-psychological). This applies equally to voluntary attention, to logical memory, and the formation of concepts. All the higher functions originate as actual relationship between individuals". A second aspect of Vygotsky's theory is the idea that the potential for cognitive development depends upon the "Zone of proximal development (ZPD); A level of development

attained which children engage in social behavior. The development of the ZPD depends upon full social interaction. The range of skill that can be developed with adult guidance or peer collaboration exceeds what can be attained alone. Vygotsky's theory was attempted to explain consciousness as the end product of socialization. For example in the learning of language, our first utterances with peers work adult are for the purpose of communication but once mastered they become and internalized and allow "inner speech".

It has to main principal of this theory were more knowledgeable other which refers to someone who has a better understanding or higher ability level than the learner, with respect to a particular task, process, or concept and (ZPD) in an important concept that relates to the difference between what a child can achieve independently and what a child can achieve with guidance and encouragement from skilled partner (Vygotsky; 1962).

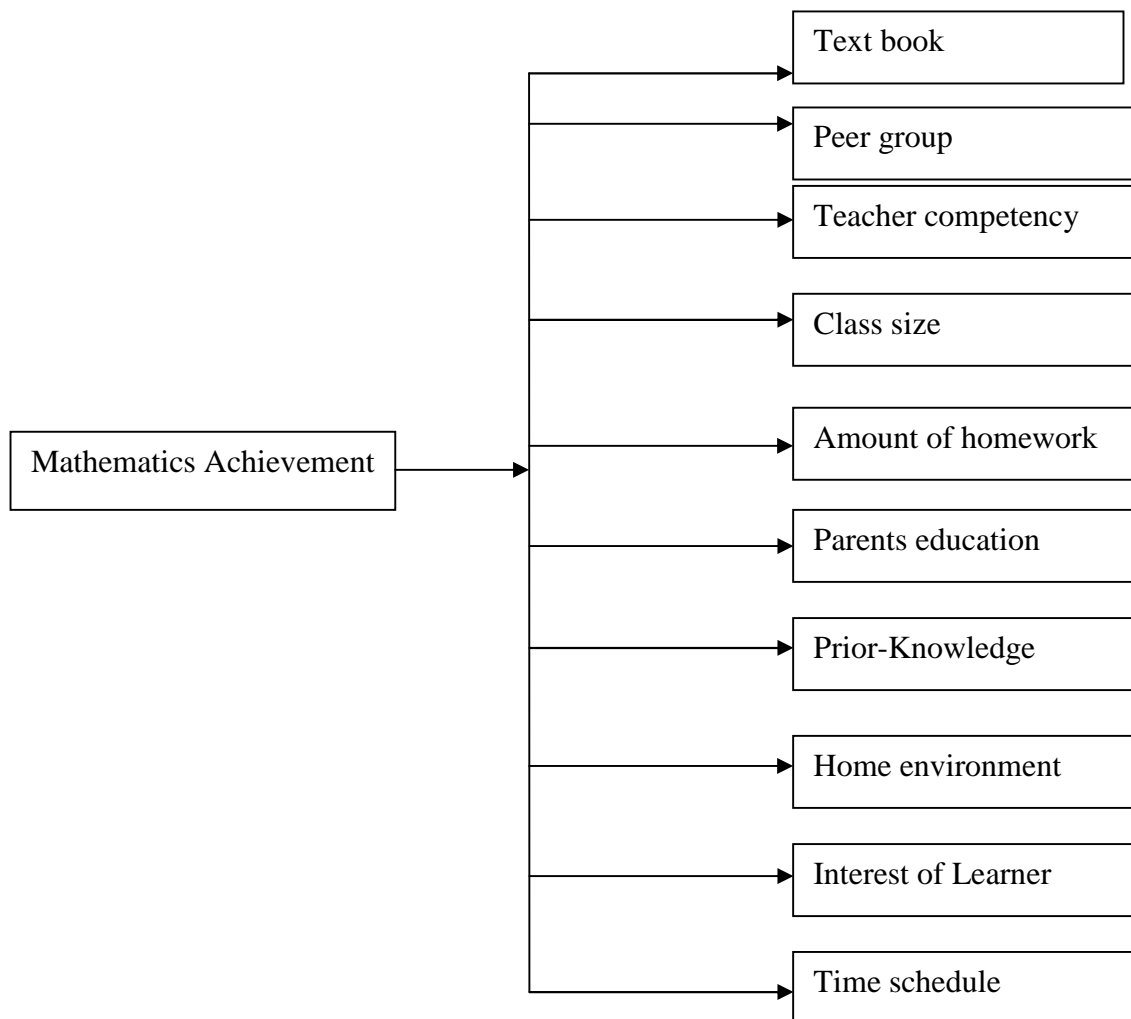
Vygotsky's theory consist both a social and cognitive process of knowledge construction. Vygotsky's theory is knowledge construction in asocial context. Then the actively and collaboratively construction knowledge and meaning by frequently discourse. The theory focuses of cultural consequence of cognitive development. Vygotsky's theory only through interaction, processes of discussion, negotiation and sharing are social constructivist learning environment, effective learning happens. Through the interaction within the socio-cultural environment and mental processes/strategies which refers to as a higher mental function. According to this theory children are very curious and eagerly involved in their learning and develop a new thing by their own understanding. The important part of learning by the child occurs through the skillful tutor with a social interaction(Kafle;2012).This solve of their problems independently from the social interaction from the learner. In this way,

some problems are solved from the full support of other. The solving problems of the minimization in direct full supports the learner develop get skill to solve using the mental power. The knowledge develop the social interaction is interconnected with ZPD. There is ZPD the learner can get full learned (Acharya; 2072).

Conceptual Framework of The Study

A conceptual framework is the key design of the basic concept of the research. The researcher has come to the main key point that the topic of current research “Factors affecting mathematics achievement of students in grade nine final examination”. These factors are based on the following framework.

Fig1: Conceptual Framework



On the basis of the above mentioned conceptual framework, the tool was constructed such as questionnaire form. By using the tools, the data was collected and data was analyzed on the basis of the conceptual framework. To find the effect of independent variables on dependent variables and to find the relationship between independent variable and dependent variable, this conceptual framework was used. The model is developed by the researcher the help of related literature, previous research and the advice of supervisor. This study was mainly based on above already explained theory socialization feminist theory of education.

From the review of empirical and theoretical literature, it can be seen that many home environmental factors that affect on mathematics achievement of grade nine students are text book, peer group, teacher competency, class size, amount of homework, parents education, prior-knowledge, home environment, interest of learner and time schedule.

Chapter III

METHODS AND PROCEDURES

Research methodology is the systematic way of doing research in scientific way. This chapter outlines the procedures and strategies used in this study. It focuses on study design, target population, sample, and sampling strategy, tools for data collection procedure and data analysis and interpretation procedures. The research is conducted on the basis of following procedures.

Research Design

The research is conducted by using mixed research design (qualitative and quantitative). Mixed methods research is a research design with philosophical assumptions as well as method of inquiry. As a methodology, it involves philosophical assumptions that guide the direction of the collection and analysis of data and the mixture of qualitative and quantitative data in a single study or series of studies. Its central premise is that the use of quantitative and qualitative approaches in combination provides a better understanding of research problems that either approach alone.

The objectives of this study is find out factors affecting on mathematics achievement of grade nine students and to analyzes the factors affecting on mathematics achievements of grade nine students. It is the quantitative and qualitative in nature. Descriptive survey method is be adopted to research the achievement of students in mathematics. Similarly, quantitative methods is used to present the factors affecting students achievement. Collected data through questionnaire, interview and classroom observation is analyzed using statistical tools and descriptive method wherever needs to fulfill the objectives.

Population of the study

This study is most importance part of the population. Best and kahn(1989) and Orodho(2012) content that, the population is any group of individuals who have one or more characteristics in common that are of interest to the researcher. The population for the present study is taken three schools located in Turmakhand rural/village municipality at Achham district. Similarly the parents, students and teachers are respondents of this study. In Siddheshwari secondary school, there are 23 students in grade nine. Similarly, 30 students in Toshi secondary school and only 17 students are only in Kameshowari secondary school. Hence, all there sample schools in grade nine has only 70 students. This 70 students' number is the population of this study.

Sample of the study

The study is be determined by census methods for student, and by using purposive sampling methods for selected for school of Achham district in Turmakhand village Municipality. The three public school selected by purposively. each school parents and teachers are selected for the study. The probability sampling and non- probability sampling are both types of sampling in quantitative research. The study is used probability sampling in simple random sampling and the non- probability sampling in purposive sampling. Hence, 70 students from three public school and 3 parents and 3 teachers are also included in this survey research. So, 76 in the sample of the study.

Tools of the Study

The study needs tools to collect data. The research is adopted questionnaires forthe students, and an interview guide to collect the teachers and parents views on factors affecting mathematics achievement ofgrade nine students atAchham district.

Questionnaires

To collect the required data related to the factors affecting on mathematics achievement of gradenine students, questionnaire tools are used to find the opinion of these selected students by items analysis process. Moreover, questionnaires is based on factors: parents related, individual related, school related and exam related. Each statements contains five columns of as strongly agree (SA), agree (A), undecided (U), disagree (D) and strongly disagree (SD). The Likert scale contains both positive and negative statements towards mathematics. The scale was developed in five points from Likert- scale as shown in table below.

Table 1: Ordinal Scale

S.N.	Rating	Marks of Positive statements	Marks of Negative statements
1.	Strongly agree	5	1
2.	Agree	4	2
3.	Undecided	3	3
4.	Disagree	2	4
5.	Strongly disagree	1	5

Interview

The interview is a face to face interpersonal role situation in which one personal, the interviewer, asks a person being interviewed, the respondent, questions designed to obtain answers pertinent to the research problem(Kerlinger 1983). The data are taken, as direct questions. Here, the researcher took interview for the parents and teachers with their experiences, opinions, feeling and knowledge. It is prepared on the guideline of the conceptual framework.

Classroom Observation Note

Researcher used class observation from to observed classroom activities and home activities of respondent. This observation from include effect of the factors on achievement of grade nine students in mathematics such as, school physical environment, and learner participation in class. The researcher also used note down in the period of observation. Therefore it is focused observation but researcher did not entirely dependent upon the note down. The researcher observed the activity of key children their class/ school using observation from and the researcher prepared by the suggestion and to get the required information. Observation schedule here, the researcher included the case students' activities, participation of case students in group and individual work, homework, class work, playing with peers, interacting with teachers.

Reliability of Tools

Reliability is a way of assessing the quality of the measurement procedure used to collect data in a study. For the results from a study to be considered valid, the measurement procedure should be first being reliable. So, reliability and validity are essential elements for the effectiveness of any data gathering procedure. Reliability is necessary not sufficient condition for validity Best and Kahn(2009). In this research, test is piloted involving the students in schools of Turmakhand village municipality by applying the split- half method, reliability test is determined.

Validation of Tools

Best and Kahn,(2009) state that, validity is the quality of data gathering instrument or procedure that enables it to measure what it is supposed to measure. For the validation of the study, students' participation and achievements related questionnaires are administered. Similarly, teachers and parent's opinion such as is

considered for the gathering data. Furthermore, items has been selected based on the level mathematics curriculum.

Data Collection Procedure

In this study is collected the required data, the researcher is visited the selected school of Achham district in Turmakhand village municipality and established good rapport with head teacher and concerned persons then took the permission to administer the test their students using questionnaires. The researcher is administer questionnaires to the students of selected different three schools. Again, the researcher is taken took interview with selected students, teachers and parents. The observation is used for data collection of students classroom in this study.

Data Analysis and Interpretation

The research is purely a quantitative research in nature. After collection of primary and secondary data, the researcher analyzed data by using SPSS 2.4. Standard multiple linear regression was calculated to find out the effect above listed independent variables irr dependent variables mathematics achievements. Correlation coefficient was used to analyze the relation between all independent variables with dependent variables. Collected data are presented in tables, which may make the data analysis more comprehensive to its reader. For the analysis of the items labeled value 5,4,3,2 and 1 is assigned to the statement for strongly agree, agree, undecided, disagree and strongly disagree respectively. The total score of five points of rating scale is 15 and average score is 3. If calculated index is greater than 3, it is favorable on the statement but if calculated mean value is less than 3 or 3, than it is less favorable on the statement. Based on this five rating scale, the collected data are analyzed and interpreted. In qualitative research, data analysis involves reducing, organization the data synthesizing and discovering what is important. So the

researcher used cross match method to analyze qualitative data given from interview, classroom observation tools of the collection data in students, teachers and parents.

This study involves a detailed description of case, follow by an analysis of the data for conceptual framework.

Chapter - IV

ANALYSIS AND INTERPRETATION OF DATA

This chapter deals with analysis and interpretation of the collected information. The researcher visited the school, parents and students. Researcher takes the responses of the respondent during the face to face interview were carefully noted. the researcher had observed mathematics class with math teacher during teaching learning activities. Then, the classroom observation note was prepared on the basis of the class observation. Every activities and behaviors of the students were carefully observed and noted. The responses of the respondents during faced to face interview were carefully noted. They were able to express freely whatever they have in their mind to analyzed the data., first he collected information were categorized according to different themes given in the vent of interview.

There was no limitation to responses for respondents. They were able to expresses freely whatever they have in their mind. To analyze the data, first collected information categorized according to different themes given in the text of interview. The observation note and themes were considered as code and the similar code version of the respondents were collected and explained in their perspectives.

In Shree Siddheswory Secondary School, Shree Toshi Secondary School and Shree KameSwari Secondary School was selected for the study of the factors affecting learning in mathematics. This school lies in the middle of the Achham district. The surrounding places of the school's area also have such types of diversities.

The Brahmin, Chhetri, Magar, Dalit etc. are the local residents of this area. Mostly, the parents of the students are engaged in agriculture as well as labour. Economically, some people of this area are weak, some even have difficulty to join

land and mouth. Initially, at the time of beginning, Shree Siddeshwori Secondary School had a L-shaped building but now the school has an story building and another trust building. There are 17 teachers and 120 students in school in which 50 boys and 70 girls.

This research was completed based on survey design selecting three public schools at Acham District. Mathematics achievement and questionnaire were used as data collection tools. The data collection procedure was started with the administration of questionnaire. the researcher modify the questionnaire used by Kerlinger (1983). Consisting only 34 statements based on the Likert five point scale, and the mathematics achievement were collected final exam mark ledger of grade nine. Thus, the obtained quantitative data were analyzed and interested under the following headings.

Factors affecting mathematics of grade nine students Achievements

Mathematics achievement score was collected form there sample school's students of grade nine and mathematics score was taken from grade nine final exam mark ledger. Questionnaire comparing thirty four items, among them 20 questionnaire was prepared to family related factors, 12 questions were prepared to school related and other two types of guide exam environment created in coded different variables. The individual scores of sample group and questionnaire are presented in Appendix C. to fulfill the first objective from chapter I standard Multiple Regression was used. the summary of standard Multiple Regression is presented in the following tables.

Table II: Model summary of Regression Analysis

Mode	Variables entered	Variables removed	Methods
1	Text book ,Peer group, Teacher competency,Class size , Amount of homework ,Parents education ,Prior-knowledge Home environment, Interest of learner , Time of schedule		Enter

a. Dependent variables; score

b. All requested variables entered.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change statistics				
					R square change	F change	Df1	Df2	Sig.F change
1	.957	.915	.904	5.099					

a. predictors: (constant), Text book ,Peer group, Teacher competency, Class size , Amount of homework ,Parents education ,Prior-knowledge Home environment , Interest of learner , Time of schedule

In the model summary table given the value adjusted R square 0.915, if the sample is small adjusted R square statics corrects R square value to provide a better estimation of the true population value. R square value is 0.904, due to small sample size the researcher has taken adjusted R square value. From the model summary table significance regression equation was found ($F(12,121) = 147.798, P < 0.01$)

With an R^2 of 0.915. A set the predictors (independent variables) accounted for the 96% of the variance in the mathematics scores.

Table III: *Factors affecting on Mathematics Achievements of Students*

Factors	Unstandardized	Standardized	Sig.
	Coefficient	Coefficient	
	B	Beta	
Text book	9.538	.014	.000
Peer group	2.074	1.49	.000
Teacher competency	-2.66	-.032	.200
Class size	-.774	-.069	.015
Amount of homework	1.597	.117	.034
Parents education	.728	.080	.010
Prior-knowledge	-.174	.025	.460
Home environment	.323	0.143	.109
Interest of learner	2.563	0.251	.008
Time schedule	1.917	.082	.040

a. Dependent Variables : Mathematics Score

b. Independent Variables : Text book, peer group, teacher competency, class size, amount of homework, parents education, prior-knowledge, home environment, interest of learner and time schedule.

School Related Factors

Affect of Textbook

A textbook is a manual of instruction in any branch of study. Textbook are produced according to curriculum. Most of the textbooks are only published in printed format

many books now are available as online electronic books. The researcher asked question to the teacher, "Does the text book effective for teaching "?

"The textbook has been crucial role for learning any subject, But the researcher had pointed over the especially the optional mathematics textbook. C.D.C. has made the syllabus and textbook" Teacher

Private publications have published different references books. Textbook is important because it is the reservoir of knowledge. It sharps the minds of students. It help to supply the reflection of society, nation and international and university. The researcher asked the question about the textbook, to the head teacher, math teacher, students and parents. The received version in their own word as below :

"The government has made the syllabus satisfactory. But the linkage of the one chapter to another chapter is different. So it should be more satisfactory if it is reorganized systematically." Teacher

"Syllabus is outdated. It should be reformulated. New topics, essential chapters should be added and not essential chapter should be removed." Math teacher

"We don't know about the syllabus. We are uneducated so we don't know the quality of textbook. So we are unaware about the syllabus. " Parents

"But somewhere answer are wrong so the wrong answers make a confusion so it should be reedited or revised date to date." Students

I found that the Beta coefficient for affect of text book was 0.14, it means that 14 % of student's achievement was affected by text book. the different voices such as satisfactory, reformulated, uneducated. But according to students view, it is found that they were neglecting textbook.

After observing we found that the book followed by school unique publication Pvt. Ltd. as reference book. In this book exercise are lengthy, unnecessary, answer's mistake. Textbook was not concise. The binding of book was not good. Papers were not quality. But the main book which was followed by school, published by CDC, Bhaktpur. It is concise in size. It has few questions in exercise group to solve for students.

There was not suitable textbook, effective practice book so that student could develop their potentiality themselves, unit test and class test were done according to teachers interest.

Peer Group

A peer group is both a social and a primary group of people who have similar interest, age, background or social status. The member of this group are likely to influences the person belief and behaviors. Peer group is both a social group and a primary group of students who have similar age , background, interest and behaviors. In other words peer is groups of students in similar types in their age, class, feelings, behavior etc. Does peer group affect the learning is the desirable questions. For this I made questions and asked the same group and noted their respected voices. The researcher asked question to the teacher, students and parents, ";Does your students are consult math problem with peer group?"

"Talented students have their own group. They was be busy on their group. But other students are from poor economical background so we cannot make discipline tight. So they are not serious in their study." Students

"Yes definitely, I have made group of talented students. I give them task to solve. Talented students solve easily but poor students are careless."Math teacher

"Peer group helps the students to learn properly, learn effectively, learn enthusiastically. It helps to students to minimize their problem." Parents

"We have all students friendship. We have group of talented students. They cooperate us in our study. They are helpful but few students are jealous." Students

I found that the different voices such they are from poor economical background. It helps to learn properly and effectively. They have their group. The Beta coefficient for peer group was 1.49, it means that, high percentage of student's achievement was affected by peer group. Significance and Beta coefficient of peer group show that, it affects the more impact of achievement of students.

After observing we found that students were not busy in solving problems. They were copying from the talented students. They were not looking serious on solving. Girls were sitting according to their group. They had 5 or 6 number of group with classroom. They help their belonging group and neglect the other group. There was not group coordination between and among students. Some students felt themselves superior some other was poor. One or two students were very good with helping behavior. Student were not regular in classroom.

Teacher competency

Teacher competence refers to "the right way of conveying units of knowledge, application and skills to students." Competence is understood as excellent capability. It includes knowledge, skills, attitudes and experiences, which has to be target category of profession of educator. Competency is the talency, ability to do something. Here teacher competency is to compete with knowledge, course and supply the mathematical knowledge among the students. It is the strongest component according to Walberg (1981). Researcher felt about teacher competency to know from

the side of head teacher, math teacher, parents and students view. For this he asked the some question and noted as answers in their respected voices.

The researcher asked question, to the parents and students about it is importance or competence of teacher ?"

"Here in our school mathematics teacher are qualified, talented. So they can teach the students very effectively but they did not give proper support to the students and give proper time ."

"We accept the competency and tallency of the teacher. In our school all most teacher are BED and MED, MSC, MA passed. Also we are given training by the government."Head teacher

"Nepali teacher is most talented. Math teacher is also talented. Teacher are engaged in politics therefore they are not careful about their students." Parents

"Teacher competency is primary, essential, so that they can pass their knowledge to us very effectively other noise it will be worthless."Students

I found that from the different voices as qualified, talented, effectively, competency is very necessary and important part of learning. It is primary, essential part of learning. After observing we found that teacher started directly the exercise and started solving he was not democratic teacher. He was roughly presented in the classroom. But sometimes he made crake jokes. He was old traditional teacher in his teaching methods. He was traditional in his methods. He was not using ICT in his classroom. They are not cooperate to each other in their behavior. They are bounded with politics. It is find that the Beta coefficient for Teacher Competency was -0.32, it means that, low percent of Teacher competency was affected for students.

significance and Beta coefficient of Teacher competency show that, it does not affect more on achievement of students.

Teacher were capable in academically but they were not using ICT.

They were teaching traditionally. Some young teacher were using less ICT.

Teachers were not following the teaching methods.

Class size

Class size refers to the number of students in a given course or classroom specifically either the number of students being taught by individual teachers in a course or classroom or the average number of students being taught by teachers in a school district, or education system. The term may also extend to the number of students participating in learning experiences that may not take place in traditional classroom. Class size indicates the number of enrolled students in a classroom. It is the important components. In foreign developed countries has adopted the small class size. But in Nepalese context it is hard to apply. Researcher willing reaches to optimum level to gather the real information from head teacher, math teacher, parents and students level.

The researcher asked question to the respondents, "Do you recommend it is necessary of class size for maintaining the class?"

For this he raised questions to them and noted as below :

"We have many students in the classroom. Rooms are full, tight. So we can't give proper time to each students."Head teacher

"It is very difficult to handle the students. We can't give especial focus to the poor students. Talented student ask in the classroom. Poor students sit in the middle and last bench."Math teacher

"We don't know how they sit in the classroom. Teacher should focus all the students equally. They should focus the poor students more than talented students. Parents

"Sir cannot teach soundly. Most of the students busy in out topic discussion. Also they focus to the talented students. They was not care poor student." Students

I found that from above statement as very difficult in Nepalese context, difficult to handle the large size, teacher give must time to talented students etc. From this researcher concluded that it is also very important aspect which affect learning. From the literature review and theoretical understanding, I found that it is the important component. They advised for limited class size. But in the context of Nepal it is not found. Therefore, I suggested the class size should be limited for effective learning. Hence, the Beta coefficient for class size was -0.69 , it means that, there is no affect achievement of mathematics class.

After observing we found that class size was too big students were tightly sitting. There were almost 60 students in the classroom. Classroom was noisy. Most of students were busy in making gossip, front line students were only serious in their study. Class had two column and each 8 rows consist 8 benches. Class looked liked hall.

There was big size classroom but students were sitting tightly. No of boys were more than girls. Benches and desk were not suitable for different level of students. Teacher was focusing only talented students proper benches and desk were there.

Amount of Homework

It helps elementary students develop proper study skills which, in turn, influence grades. The national education association along with the national PTA suggests adding 10 minute of homework per night incrementally with each grade level, as a

general rule of thumb. Thus a first grader get a total of 10 minutes, a second grader 20 minutes, a third grader 30 minutes, and so on, not to exceed two hour per night total in high school. More than 30 minutes of homework per class may be on exercise in futility because the student can feel overwhelmed by the quantity of work, get distracted or bored and end up giving it a halfhearted effort just to get it done.

Homework is the such task which makes the students busy at home about their classroom task. They search the materials, read the book, write the answer, solve the problem, etc. Researcher asked a question, " Is there any necessary to give regular to give homework? "

"We give them to much homework. We have made the strict rule. Talent students solve easily but poor student don't solve because most of time they was be busy in their cornfield."Head teacher

"Homework makes them busy in their classroom. They was solved which was shape their learning. So we focus to give homework."Math teachers]

"All the time they say we don't have homework. Therefore they go to play football with their field. Some of them go to cornfield to help their parents."Parents

"Homework is not necessary to give. Teacher was not check our solving even classroom. So they are all time wasn't to be free, out of checking their class work, homework copies."Students

The Beta coefficient for amount of homework was 0.117, it means that only 11% of students' achievement was affected by amount of homework. It means also amount of homework is more significant for achievement of Mathematics.

I found that from the respected voices as they are given amount of homework which is necessary. They made them busy in classroom. But students voices are different. It is not necessary.

After observing we found that the teacher gave few number of questions to solve. It was not sufficient to practice the taught lesson. Also classroom activities was not to students. Also teach were not caring their homework. Few students had done the homework. Teacher checked two and three copies of homework and started to solve exercise.

Teacher provided too much homework to the students. But teacher did not check regularly. So students were careless about their homework.

School's Policies for Learning Mathematics

School's policies play great role in the learning process. A critical study of all aspects such as administration, commodity, relations, students' performance, staff's relations etc. and development of operational policies can reduce all the problems that can be observed at school. The following are some of the representative responses of head teacher, math teacher, parents and students in respective question for school's policies for learning mathematics in the days to come.

"We have started semi-hostel and full hostel facilities at minimum cost for SLC appearing students from this year aiming to 100 percent with the help of teachers. Recently, we have managed one extra math teacher and started extra classes for grade ten." Head teacher]

"Students are called for weekly test but they was not come. They say that we have to go our corn field to support our parent."Math teacher

"We have sent our children for extra classes in time but what they do ? They come to home at evening. But some parent can't send their children for extra class because of their poor economical background."Parents

"The school has provided extra class in the morning at minimum cost but the number of students are some as previous class, so the school should manage us at least two sections by observing the level of students."Students

Especially, the school provided the extra class to support for learning mathematics. So the students are getting happy to pass the SLC exam. For this, the parents are sending their children in time at school and supporting by financially. The above views indicate that a lot of improvements was done from this year and the process of improvements are still continuing. The result as well as learning of mathematics cannot be no more analyzed due to the beginning of the implementation, but the visions of school are clearly mentioned by head teacher, teacher and parents.

After observing we found that school was running itself without any discipline. There were policies between among teacher. Head teacher was not so tight because he was also the member of political party. School was big in size, with physical facilities. But no regulation was there. But few teacher were conscious about school. They were angry with school's rules and regulation.

School had provided hostel facilities but cost was not high. But students were not in hostel because of their poor economical background. There was not any punishment system for teachers who were engaged in politics, not reward system for regular teachers. Unit test and class test were not running according to rules and regulations. Management committee was not look after any exam to began regularly as not.

Parent's Education

Parents' educational level is seen to be a key factor in academic achievement of students' parents serve as a role of model and a guide to encourage their children to pursue high educational goals and desires by establishing the educational resources at home and holding particular attitudes and values towards their children's learning. In this case, the educational level of parents serve as an indicator of attitudes and values, in which they use to create a home environment that, can affect children's learning and achievement. Parent's education refers to the academic and non-academic qualifications, awareness, moral and good character of parents by which children learns many things. There is not only role of teachers in learning process but also the parents awareness, education, environment, interest etc. the parents teacher the basis knowledge of life, practical aspects and skillful concepts, right vision of parents, appropriate norms and values to their children. If the parents have good education, they try their best to enable their children academically. Therefore, they can live easily in the society and inspire him/her to the right use of life's every potentiality and opportunity.

Some indicators' that most of the respondents's parents were uneducated but parents' education helps the children to get good education and make them economically sound. It also enables them to live in the society and face challenges with each person for life. So that parents are first teacher, when parents are educated then parents plays important role in learning mathematics. Researcher asked questions, what is the educational condition of yours family ? The selected one parent said, " We have not got any formal education we can't count money and do translation my children most know household works then education.

It shows that respondent's parents faced difficulties in managing the home environment, in addition, researcher asked same question for students. she said, "My parents are illiterate and they cannot teach me."

The researcher asked a question, "Is there any necessary to parents' education?"

There is great conservative concept of parents in community. Girl must know household works than education, home is a place to learn household work. Researcher asked the question, " What is the role of parent's education in learning mathematics ? the mathematics teacher said, " Parent are the first teacher of children so it is very important role of parents to participate their children in mathematics learning if parents are literate they teach many kinds of knowledge for their own children."

Another teacher answers the same questions, " The role of parent education provides to learn mathematics easy and interesting for children."

The Beta coefficient for parents education was 0.80, it means that high percentage of students achievement was affected by parents education.

While analyzing the above- mentioned respondents of parents, it can be known that, parents had traditional belief and primitive thoughts, which was a matter of hindrance in overall development of their children. It was due to the lack of parent's education that they had not taken formal education. Parent had not positive attitude towards daughter and they were not interested and aware to educate.

Prior-Knowledge

Regarding the children's learning, cognitive philosophy believes that sense impression is the primary source of knowledge. It becomes knowledge only when the mind systematized it. Therefore, intellectuals are taking as the primary source of

knowledge. They further believe that pre-knowledge is a pre-requisite for effective learning.

From the questionnaire 55 % of respondents expressed their views " Mathematics is difficult subject, the nature of mathematics is vague". The problems of mathematics are difficult. On the other hand, the teacher said, " The students come from different background and often lack of pre-knowledge.

In addition, the nature of difficulties faced in the classroom should that learning mathematics was difficult in the class due to the lack of pre-knowledge. The researchers observed there public school's administration and concluded that school administration supported to the grade IX students in mathematics subject, sometime school conducted extra-class and gave opportunities to the students but the students' did not participate in the school program.

Regarding interaction between administration and student's, it was not found better favorable environment having other resources. The researcher took ten students for the purpose of the study for learning environment, most of the students' said that school administration is the most important factors of the learning environment. Among them, researcher asked the question to the selected student. " What types of program is launched by your school to improve mathematics knowledge of weak students ? one student said , " Our school conducts school on interaction program teacher training but it is not scientific due to the political and other factors". In the above same questions another respondents said, " some time school organized program that is not relevant to improve weak students for mathematics learning.

The same type of question asked to the next respondent and he/she said, " specially, school not provided that any program to participate for weak students". To

explore the possible achievement in mathematics of students, the researcher asked a question to the students. Then students replied the following views:

"Yes, I'm feeling mathematics is hard subject but in basic levels my favorite subject was mathematics. Now a day we don't get sufficient time to practice mathematics of we felt it hard subject". The Beta coefficient for prior- knowledge at home was 0.025, it means that, 2.5 % of students achievement was affected by their prior-knowledge.

The researcher takes views Mathematics teacher towards respondents. Most of the students were looked tired and lazy but other students looked confident and active to learn. He/she agreed that they have lacked time to study at home. They learn mathematics slowly as they have lacked pre-knowledge and had not good home environment. He gave more sympathy to the students. He said that their guardians had not come to school to talk their student's performance in mathematics yet. There was not equal involvement of all students in class works but the students did not complete their home work every often because they said that they had no time to do class works at home. So they had different level of knowledge and regional culture. therefore, they felt difficulty in learning.

As we know that school plays vital role to the students for learning mathematics. School should be well equipped and should provided opportunity and facilities to the students for learning mathematics. In the case of studied students, they were not getting favorable environment due to socio-economic pattern of the students. According to the questionnaire of respondents, they were not satisfied to the school management. School administration managed extra classed but the students were not getting benefit. Researcher asked the question about the attendance in the class and they were unable to learn the mathematics as expected by teacher and parents.

Home Environment

Home environment is the such components which describes about the reading room, parents and other education related behaviors. It is crucial component which is directly associated with learning of students. Some parents are educated while other are not. So they could not make the home environment according to was of students. Because they are poor.

I asked the question to head teacher, math teacher, parents and students and noted them as below.

"But home environment is very essential part of learning. Most of the students are from poor economical background so that they don't have safe and good home environment." Head teacher

"Home environment is crucial part of learning so that it helps to boost up their learning. They are busy with their field in their surroundings." Math teacher

"We have few rooms in our home. So we can't make concentration our children to their study. So we can't give the home environment to our children." Parents

"We sit together with our family members. We don't have proper home environment in our home. We can't concentrate our mind to study. So we cannot solve all homework properly.." Students

The researcher asked a question, "Do you feel it is necessary for affective teaching in home environment ?"

I found from the above statement that environment is essential part of learning. It help to learn every one. But some students were worried about their home environment. Due to poor economical home environment they couldn't learn. The Beta coefficient for home environment was 0.143, it means that 1.4 % of students'

achievement was affected by their home environment for good achievement of good score of Mathematics.

After observing we found that students passed their 2 or 3 hrs in the playground which was near to school. Also home environment was not good. They had small house, few number of room, poor economical background. So they could not get the good home environment to their children. Parents weren't educated, they earned money working in others cornfield. So they had miserable life. But few of parents were educated. They used to send their in boarding school.

Home environment was not good. They had not separate room to study. They used to sit together. They had poor economical background. They used to help their parents in their corn field. So they could not get proper time to study in their home. Most of the parents were engaged in agriculture.

Interest of Learner

Student interest in a topic holds so much power. Factoring for student interests works well with instructional planning based on readiness and learning profiles. One example is student watching videos, listening to speakers, and journaling to make comparisons between social injustices from the past and forms a bullying that occur in today's schools and communities.

First step to differentiate for interests is to find out what student care about and like to do student surveys and learning profile cards are two method for collecting data. Parents and students providing these details send the message that their experiences matter. That is powerful message to start off the school year or semester. Interest is associated with the success and failure of life and achievement. Here interest of learner indicates the willingness of students toward subject, behaving with

optional mathematics. Researcher has asked the question and noted them in their respected voices as below :

"Interest of learner plays vital role in learning. So make the classroom effective. But most of the students are not interested in their study because of their home environment." [Head teacher]

"We try to make the classroom effectively learning environment. Talent students are interested towards their study but poor students are not focused to their study." Math teacher

The Beta coefficient for interest of learner was 0.251, it means that, 2.5 % of students achievement was affected by their interest. So, most of the students are grow their study by their own perception.

"They are not interested in their study. They go to bed fast not get up in the morning. They are stubborn. They are out of our control." Parents

"Class books are not tied up with juniour graded books. It is haphazardly edited and formulated. Exercise are not proper. We are not interested to solve because we don't understand teaching." Students

I found from the above statement that interest of learner is the essential part of learning. It helps to gain knowledge. It is depend on the competency of students. Talent students are focused to their learning but poor students neglect study. After observing we found that there was not extra time to students from teacher side. Students only finish their homework but they did not work seriously and practice extra exercises. There were not motivating activities to students. Students were not curious to solve homework but not class work.

They were coping from talented students. They had no interest in learning.

Students were not interested in mathematics subject. There was traditional teaching strategy therefore students felt bore in their study. Textbook was referred to the government book which was not suitable and enough for practice.

Time schedule

The scheduled time of any crew is the time, calculated at the beginning of the vent, that they should arrive at any given control, which is fixed from the start of the event. A schedule or a timetable, as a basic time management tool, consist of a list of times at which possible tasks, events, or actions are intended to take place, or of a sequence of events in the chronological order in which such things are intended to take place. For ex; calender. Calendar where the person making the schedule can not the dates and times at which various events are planned to occur.

For the mystery of success and failure. There is "invisible hand" which is directly associated. That important components is time schedule. Researcher feels the important components. He asked the question related to this and noted them in their respected voices.

The researcher asked a question, "Do you feel that time schedule is necessary for good teaching?"

"We have allocated 40 minutes everyday for optional mathematics. We have divide equal time to equally to all subject."Head teacher

"Students don't give proper time to the difficult subject. They don't give enough time to their mathematics subject."Math teacher

"They are lazy. They don't give time to their study. We are from poor economical background. So that we can't make them free all time. They also support in our corn field."Parents

"We don't have proper time to read and give time to all subjects equally. So that we are weak in those subjects."Students

The Beta coefficient for time schedule was 0.82, it means that 8.2 % of students achievement was affected by time schedule study. so, time table is the key factor for good achievement of mathematics class.

After observing we found that teacher was late to classroom. School had allocated 40 minutes time per period. But teacher were not serious about time schedule. They were careless. Some were very serious, they were young teacher. There was 45 minutes break time at 1 pm to 1:45 pm. School had allocated enough time but teacher were not in time. They were 5 minutes late to class every day.

Chapter - V

FINDINGS, CONCLUSION AND RECOMMENDATION

This chapter deals with the major findings of the research and conclusion and implication for further study. The first section reveals the summary, the next sections lists the major findings and conclusions derived on the basis of research analysis and finally presents recommendation for further study.

Findings

The following points were observed while conducting this study which are the major findings of the research.

There was not suitable textbook, effective practice book so that student could develop there potentiality themself, unit test and class test were done according to teachers interest.

There was not group coordination between and among students. Some students felt themselves superior some other were poor. One or two students were very good with helping behavior. Students were not regular in classroom.

Teachers were capable in academically but they were not using ICT. They were teaching traditionally. Some young teacher were using less ICT. Teachers were not following the modern teaching methods.

There was big size classroom but students were sitting tightly. No of boys were more than girls. Benches and desk were not suitable for different level of students. Teacher was focusing only talented students proper benches and desk were there.

Teacher provided too much homework to the students. But teacher did not check regularly. So students were careless about their homework.

School had provided hostel facilities but cost was not high. But students were not in hostel because of their poor economical background. There was not any punishment system for teacher who were engaged in politics, not reward system for regular teachers. Unit test and class test were not running according to rules and regulations. Management committee will not look after any exam to be taken regularly as not.

Home environment was not good. They had not separate room to study. They used to sit together. They had poor economical background. They used to help their parents in their corn field. So they could not get proper time to study in their home. Most of the parents were engaged in agriculture.

Students were not interested in mathematics subject. There was traditional teaching strategy therefore students felt bore in their study. Textbook was referred to the government book which was not suitable and enough for practice.

School has allocated equal time to the all subjects. But mathematics and science teacher were late to classroom. Also they were not regular to the classroom.

Conclusion

The following conclusion have been made by this research work. Unit test and class test is done according to the teacher interest. It is not conducted according to the rules and regulations of school. Management committee will not look after any exam to be taken regularly as not. Students are not regular in classroom. They are absent no regularity of the student attendance. The main occupation of parents is agriculture. Thus, it is difficult to earn money therefore their income is used for their basic needs.

Parents do not have extra money to pay for extra class and hostel. The inter personal relationship between the teachers and students were not maintained properly Teacher biased the students.

The teacher was not follow the required teaching methods. The teaching materials were not well prepared or used in class room. The environment of classroom were effected the economical condition of the school. Due to the poverty there were many lack of facilities. The teacher, students, parents must join hands together to uplift the educational system. The school must provide refresh training to the teacher time and again. Lack of teaching materials and adequate instructional materials was caused of being weak in mathematics learn in school must manage new policies for improvement of teaching learning process.

There are the main factors which are affecting in learning mathematics achievement in secondary level students.

- Educational policies
- Educational system
- Educational environment
- Physical availability at school
- Poor trained teachers in mathematics
- Traditional curriculum
- Paper and pencil test
- Uneducated family background
- Poor management

- Interest of learner, textbook, teacher competency, peer group and time schedul.

Recommendations for Further Research

From the above findings and conclusions, the researchers would like to suggest some Recommendation for the improvement of mathematics learning of the mathematics.

In the context of Nepal, many students have low learning in mathematics and the trend is still continuing. Only the researcher has researched about factors which affect learning . Although qualified, trained and experiences teachers are working at public schools. Continuous assessment system, implementation of operational mechanism and its continuous analysis, a change from syllabus focus to students outcomes as well as a move form teacher directed classrooms to students centered learning is necessary to maintain quality education at school.

This was the case of one schools so the results cannot be generalized an all situations. It is due to lack of time and resources. Thus, similar researches should be done in large schools district wise. Government should researcher about this problem. Government and policies maker should make good mechanisms so that school can adopt to promote mathematics learning.

- Similar study should be conducted at all level of school and samples can be selected from different districts.
- Similar type of studies with large sample size could be taken in order to obtain more valid findings for broader generation.

- It is only related in factors affecting on mathematic achievement of grade ix students. It is recommended to find out other factors which impact on mathematics achievement to other classes.
- Similar study was appropriated for basic school level to higher level.
- Parent's awareness programmas should be conducted.
- It is recommended to study, why the family home environment does support for effect on the achievement of student's and so on.

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Appendix - I

Interview Schedule for Parents

Parental Related Factors

1. What is your main Occupation ?
2. How much is your yearly income?
3. Do they all go to school?
4. Do you visit school area where your children read?
5. How do you support and encourage to learn mathematics to your children?
6. What is Your all family are educated ?
7. How is the environment at home for learning?
8. How do you engage you children in household works?
9. Do you fulfill their basic need for the study?
10. How many hours They used to read?

Appendix II

Interview Schedule for Students

1. Had you regularly gone to school?
2. Did you use to complete homework regularly?
3. Which was your favorite subject?
4. Did you use to complete homework regularly?
5. What did you use to do in holidays?
6. Did your mathematics teacher used to use teaching materials in classroom?
7. Was there anyone in your family to help you in mathematics?
8. How many hours you used to read at home?
9. Did you used to do any job while you were studying at the sometime?
10. Did you mathematics teacher use to check homework regularly?
11. Does he came to the class regularly?

Interview Schedule for Teacher

1. What is the role of parent's education in learning mathematics ?
2. Which areas of the mathematics is more difficult than other.
3. Which teaching method do you which use in the mathematics classroom?
4. Is culture has role to learn mathematics?
5. Did they have interest to learn mathematics?
6. What is the situation home environment of students regarding mathematics learning?
7. Did they came to the class regularly?
8. Which teaching materials do you use in the mathematics classroom?
9. How did they read the mathematics problem in classroom?

Appendix IV

Checklist for Observation of the Grade Nine

Direction give () to indicate the achievement has been demonstrated.

Statement	Yes	No
School related factors Textbook Peer group Teacher competency Class size Amount of homework		
Students related factors Parents education Prior-knowledge Home environment Interest of learner Time schedule		

Attitude Statement

S.N.	Statement	SA	A	U	DA	SDA	
1.	I have not supplicant time to read at home						
2.	Your parents support to manage necessary thing.						
3.	Any family member is not educational job holder.						
4.	You do not have guidance to learn mathematics at home						
5.	Works in the field morning and evening.						
6.	My family condition is not good.						
7.	Joint family is effects on learning environment.						
8.	You have not separate study room at home						
	Individual related Factors						
9.	I like mathematics as well other students.						
10.	You are not regular in school						

11.	I consult to my friends when I missed the class						
12.	Give more time to math than other subject						
13.	I always good mark in mathematics						
14.	mathematics is not my favorite subject.						
15.	I do not enjoy learning mathematics staffs.						
16.	You asked to your teacher if you can unable to solve the mathematical problem.						
17.	I think mathematical knowledge is useful for my future in any area.						
18.	Help my peers when they are facing any problem in mathematics						
19.	I feel difficult to understand when teacher explain in Nepali language.						
20.	I take additional learning time for teacher .						
	School Related Factors						
21.	Mathematics course is completed on time						
22.	Mathematics teacher not using teaching materials						
23.	The teacher focus on weak students.						
24.	Tests are taken at the end of each lesson unit.						
25.	I am satisfied with school environment.						
26.	Are you satisfied with your class size.						
27.	Mathematics teacher bias towards the students.						
28.	Teacher comes regularly in school.						
29.	School sometimes does not conduct comparative.						
30.	Mathematics teacher does not give class work and home work.						
31.	Peer help you to learn confusing lesson.						
32.	Mathematics teachers give chance to ask when you do not understand.						
	Guide exam environment create.						
33.	Parents do not help study environment.						
34.	Is environment effect in the examination?						