

**CAUSES OF LOW PERFORMANCE OF SECONDARY LEVEL
STUDENTS IN MATHEMATICS**

**A
THESIS
BY
CHAKRA BAHADUR THAPA**

**FOR THE PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE
DEGREE OF MASTER OF EDUCATION**

**SUBMITTED
TO
DEPARTMENT OF MATHEMATICS EDUCATION
CENTRAL DEPARTMENT OF EDUCATION
UNIVERSITY CAMPUS
TRIBHUVAN UNIVERSITY
KIRTIPUR, NEPAL**

2022

Letter of Certificate

This is to Chakra Bahadur Thapa a student of academic year 2074/75 with campus Roll No. 334 exam Ro Roll No. 7428256, thesis number 1606 and T. U Regd. No. 9-2-370-16-2010 has completed his thesis under supervisor of Pro. Dr. Bed Raj Acharya during the period prescribed by the rule and regulation of Tribhuvan University, Nepal. The thesis entitled “**Causes of Low Performance Of Secondary Level Students In Mathematics**” has been prepared based on results of his investigation. I hereby recommended and forward that his thesis be submitted for evaluation as the partial requirements to the degree of Master of Mathematics Education.

.....

Prof. Dr. Bed Raj Acharya

(HOD)

LETTER OF APPROVAL

A thesis by Chakra Bahadur Thapa entitled “**Causes of Low Performance of Secondary Level Students in Mathematics**” has been approved for the partial fulfilment of the requirements for Degree of Master of Mathematics Education.

Committee for Viva-Voce

Signature

- | | |
|--|-------|
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(Chairman) | |
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Date: 2022-05-30

RECOMMENDATION FOR ACCEPTANCE

This is to certify that Mr. Chakra Bahadur Thapa has completed his thesis entitled “**Causes of Low Performance of Secondary Level Students in Mathematics**” under my supervision during the period prescribed by the rules regulation of Tribhuvan University, Kirtipur, Kathmandu, Nepal. I recommend and forward his thesis to the Department of Mathematics Education to organize final viva-voce.

.....

Prof. Dr. Bed Raj Acharya

Supervisor

Date: 2022-05-30

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DEDICATION

Honestly dedicated

To

My Parents

Ran Bahadur Thapa and Bishnu Maya Thapa

DECLARATION

This thesis contains no material which has been submitted for the award of others degree in any institution. To the best of my knowledge and belief this thesis contains no material previously published by any authors except due acknowledgement has been made.

.....

Chakra Bahadur Thapa

ACKNOWLEDGEMENTS

I express my gratitude to the respected supervisor Prof. Dr. Bed Raj Acharya, Head of Department of Mathematics in Central Department of Education T.U, for his valuable suggestion, guidelines, encouragement and constructive suggestion while conducting this research study.

Similarly, I would like to express my sincere gratitude to prof. Dr. Binod Dhakal, Mr. Abtar Subedi, Mr. Dipak Mainali, Mr. Krishna Prasad Adhikari, Mrs. Hom Kumari Adhikari, Mrs. Sarala Luitel and all my respective teachers under the Department of Mathematics in Education at T.U. Kirtipur for their valuable comments and suggestion to bring this work into present form.

I would also like to thank Mrs. Hom Kumari Adhikari, administrative staff at Department of Mathematics in Education for her kind support during my study. I am also very much indebted to the principal, Mathematics teacher, students and whole family of Shree Devasthan Secondary School for their co-operation I got during the study.

My special thanks go to my Mrs. Kiran Thapa "Bhandari" and my sisters Sabitri Kumari Karki, Skun Bhandari and Gyanu Thapa. I appreciate the encouragement and enthusiastic support that I got from my friends and relatives. I am thankful to Mrs. Kiran Thapa for their continuous guidance and help during the work. Finally, I wish to express my gratitude to those who have contributed to this study directly or indirectly.

.....

Chakra Bahadur Thapa

ABSTRACT

This is case study research titled “Causes of low performance of Secondary level students in Mathematics’”. The prime concern of this study was to analyse the causes of low performance of secondary level students in mathematics and to suggest the possible ways for the betterment of student’s performance in mathematics.

For this study researcher selected one government school through convenience sampling procedure from Baglung district. The interview guideline, classroom observation from and school document were the main tools of this study. The collected data were organized, analysed and interpreted based on descriptive analysis to find the causes of low performance of secondary level students in mathematics.

After analysing and interpretation of collected data, the findings indicates lack of teaching learning materials, poor school environment, poor motivation for students are the cause of low performance of secondary level students. Also findings indicates that there is most of the parents were illiterate so that they cannot provide further guidance and feedback in mathematics, students did not pay attention while the teacher taught in classroom are the main causes of low performance of secondary level students in mathematics.

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ABBREVIATION

CERID	Research Canter for Educational Innovation and Development
CRC	Curriculum Researcher Canter
ICT	Information Communication of Technology
SEE	Secondary Education Examination
SES	Social Economic Status
SLC	School Living Certificate Student

CHAPTER I

INTRODUCTION

Background of the Study

Mathematics is importance and useful in human's life. It has a long history from antiquity and has been developing with different civilization. Mathematics has played an important role in building and perfecting all sciences in this world of today. It is also said that if anybody wants to make success in her/his life, she/he must recourse the mathematics. Mathematics develops power of acquiring knowledge, thinking and generalization. It is one of the main subjects through all over the world in school education which is considered as essential part of all citizens.

The level of the student are determined by the evaluation applying different tools of achievement. The tools of the achievement on examination are obtained on the basis of oral, written, practical assessment, oral written and practical assessment can be reliable means for the determination of performance of mathematics in secondary level students. There are responsible factors for the students' achievement at mathematics such as a teacher qualification and education background teaching techniques, instructional materials, individual difference, peer group, homely environment, parents attitude and socio-economy status, student laver and interest etc this factor have been uplift the achievement and performance level of students.

Most importantly, the cause of low achievement at mathematics in secondary is not just an indivual question, it is an academic question, equally it is a political, economic, cultural and social question. Also it is a nationwide question raised in Nepali education system.

In the context of Nepal, it was found the performance of many students was very low at mathematics in secondary level. So it is necessary to study further to know the cause of low achievement of mathematics in secondary level. Thus the study is aims to study to the root cause of low performance of mathematics in secondary level students.

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Mathematics is the process of learning and it is an expression of human mind, it is extra, precise, systematic and logical subject. It reveals hidden pattern that help us to understand the world around us. Mathematician seeks and uses patterns and to formulate new conjectures and they resolve the truth or falsity of such by mathematical proof. . When mathematical structures are good models of real phenomena, mathematical reasoning can be used to provide insight or predictions about nature. Through the use of abstraction and logic, mathematics developed from counting, calculation, measurement and the systematic study of the shapes and motions of the physical objects Practical mathematics has been a

human activity from as far back as written records exists. The research required to solve mathematical problems can take years or even centuries of sustained inquiry.

Mathematics has been accepted as an important component of formal education from ancient period to till now. History shows us that ancient people developed mathematics practically being obliged to solve day to day problem for in our life. Later on advanced from the mathematics structure, rules, formula, theories have been developed and used on solving social problems through empirical observation and experiences. Now days, every human discipline is interpreted in mathematical model. Mathematics is a gate and key of all sciences. It is develop from human civilization to reflect human development. It is directly and indirectly with the human activities. Therefore, there is crucial role of mathematics to the everyone's daily life and also for the base of future studies. Early mathematics required a practice basis for its development and such a basis arose with the evolution of more advanced from of society. It was along some grate rivers of Africa and Asia, that the new form of society made their appearance. Thus, early mathematics can be said to have originated in certain areas of agricultural and engineering pursuits.

Mathematics is very importance in our daily lives since it deals with real life situation in our daily activities. A thorough understanding of mathematics is an asset is not essential for applicants interested in obtaining better employment the word over in other words mathematical competence is an essential component in preparing numerate citizens. For employment and its needed to ensure the continued production of highly skilled person required by industry science and technology mathematics does not only empower people with capacity to control their lives but also provides science from foundation for effective theories it also guarantees society a vigorous economy.

The world technology advances today involve a solid mathematical background which leads to job opportunities in the world. At its most basic level mathematics is a requirement for science computer technology and engineering course. This is based on the fact that from hours to the work place technological tools have become a part of our day life activities because of the importance of mathematics already highlighted above school must respond with effective teaching and learning of mathematics from greed on to university level. Despite the importance

of mathematics highlight above, learning continue to fail in mathematics such that failure rate in the mathematics increasing each year by year.

Nowadays, mathematics is the central part of school curriculum in Nepal. It is one of the main subjects in school education. There is no other subject in the curriculum likes mathematics which makes student brain active comprising problem solving approach that helps in the development of mental faculties. Mental work is needed to solve mathematical problem. If child has mathematical problem her\his brain becomes active in solving the problem. Each problem of mathematics possess such that sequence which is necessary for constructive and creative process. In this way, all-mental abilities of child are developed through mathematics.

Statement of the Problem

Compulsory Mathematics is a signification subject in human life. Although mathematics is emphasized like language, most of the students feel it as a difficult subject and majority of students have failed in mathematics in SEE examination. SEE result has become the most of influencing indicator in determining the effectiveness of schools. However, most of the Most of the student obtain low achievement in mathematics as it is technical and difficult subject. In the past days, most of the students in Nepal were found to be failed at mathematics every year in SLC\SEE examination such as in the year 2070,44.24% students were secured below 32 marks and in the year 2071, 42.17% students were secured below 32 marks. There might be many causes behind the problem. The researcher here attempts to identify certain factors\causes which are more responsible factors for the low achievement in secondary mathematics. Researcher in this research proposes to find out the causes which has significant relationship with mathematics achievement . Thus the problem of the study conceded cause of low performance of mathematics in secondary level students in Baglung district.

Main problem of the study was mainly concerned with the low performance in the student in compulsory mathematics in SEE examination .The researcher thought the answer of the following specific questions.

- What are the causes of low performance in compulsory mathematics in SEE examination at Baglung district?

- What are the suggest the possible ways for the betterment of student's performance of Secondary level Students in Mathematics ?

Objectives of the Study

Now days mathematics is use every activities of human life. It is developed with human civilization, just for significant to human life that no one can be away from its use. Mathematics is the one of the main subjects, taught in school education that is considered as essential for all citizens. The overall objectives of this study were to analyse and identify the causes that affect student's failure in mathematics in SEE examination Baglung District.

This study was intended to achieve the following objectives:

- To find out the causes of the low performance of Secondary level students in Mathematics
- To suggest the possible ways for the betterment of student's performance of Secondary level Students in Mathematics

Rationale of the Study

Mathematics is one of the most important subjects of school education. As stated in its background, most of the students in public Secondary schools are being failed in mathematics in SEE examination, especially. In one hand it was necessary to introduce new concepts in mathematics which is being developed day by day with new ideas. On the other hand there are still low qualified and under qualified teachers teaching mathematics. It means there is lack of trained subject teacher, lack of ICT in remote area of the country. Besides it, this study would help to find the different factors(cause) that affect students to be failed in mathematics in SEE examination. This study tried to explore the attitude of failure students toward the present mathematics contents and suggested for improving some main cause which has increasing failure rate. Also point out the relation between causing variable and mathematic performance, upgrading system which could be important value of examination and teacher in Baglung district. It also helped to the researcher to seek further study.

Mathematics is one of the most important subjects in the school curriculum. It is widely used and most applicable discipline in the society. The result of the students in mathematics was low in average school. Maximum numbers of the students have been failed in mathematics and most of them feel more difficult to understand. In this context this research was gone to find the following significance

- The study would be helpful for planners because they have to plan different strategies for the improvement of low achievement rate.
- This study helps the parents and teachers to manage better learning environment at school and home.
- This study helps to policy makers, educators, administrators and teacher to improve the teaching learning procedures.
- After reading this thesis, readers introduce about the cause of failure and introduce about which factors more responsible than other to fail in SEE examination.
- This study opens doors for further research in the areas of causes of failure in mathematics.

In the light of above mention significance it will be become necessary to investigate the causes of students failure in mathematics of Baglung district.

Delimitation of the Study

The study has the following limitations:-

- This study is limited to Baglung district.
- This study included only the students of grade 10 .
- The study is limited to only Mathematics teacher, Head teacher, 7 student from 10 and their respective parent of that school.
- This study was limited to explore the Achievement in mathematics at secondary level (SEE)
- This study was completed by using achievement test, interview, class observation and questionnaire she dual.

Definitions of Technical Terms

Some of the terms used in this study are defined as follows

Failure. Student who failed in the mathematics in SEE exam.

Teacher. Who had been involved in teaching compulsory mathematics in grade 10.

Students. The entire student studying in class 10.

Causes. It is related to the things that make students fail.

Achievement. Achievement is the study in defined on the basis of mathematics source obtained by the students in the test taken by school.

Secondary school. The school based in the class 1-10

Public School. Public schools are those schools which receive the government grant for the salary of teacher and other purpose.

CHAPTER II

REVIEW OF RELATED LITERATURE

Review of related literature is an extracted task, calling for a deep insight and clear perspective of the overall field. The main purpose of review of related literature is to find out what works have been done the area of the resources problem under study and what has not been done in the field the resources study being undertaken. The review of related literature helps to make the concept clear for the study and also directed to analyse and interpret the data. Literature review helps in undertaking new research problem in a way to provide continuity with the past research by avoiding unnecessary duplications. There were some study related to achievement of mathematics was review for this study. For few related literature had been reviewed as follows:

Empirical Literature Review

Pant (1978), did an experimental research work on "Effectiveness of the use of unit test results in enhancing pupil achievement in mathematics" with the objectives to find out the effectiveness of unit test as a teaching tool for enhancing achievement in mathematics at the seventh grade level of a secondary school in Kathmandu Town Panchayat. He selected eight students from one school by systematic sampling and taught eight units from textbook. Unit test were given at the end of each unit in experimental group. A comprehensive test has given the multiple choices, completion items. He found that the achievement of two groups differed significantly.

Raliman (1981), did his thesis for Master's Degree on "Achievement in mathematics by sex: A study of sex differences in achievement in mathematics of seventh grade students in selected schools of Kathmandu Nagar Panchayat Area with the objectives to investigate whether sex influenced the achievement in mathematics. Achievement test (Knowledge, Skill, Comprehension and Application) in Arithmetic, Algebra, and Geometry was prepared and 20 administered in five schools. The t-test was applied to conclude that the superiority of the boys over the girls with respect to achievement in mathematics as a school subject with regard to achievement in mathematics by area and also cognitive levels.

Ghimire (1997), studied on 'A study on factors affecting teaching/ learning mathematics at secondary level' with the object to study the factors affecting in learning of schools in terms of the following: school environment, family background, motivational factors, physical facilities, interest of the learners, instructional materials. The tools for the study were administered to sample of ninety students and test was applied to conclude the following results. Environment of school in both rural and urban areas affects equally but the boys are more affected those girls. Students of Araghchi and Chitwan were more affected than that of Kathmandu, Home environment affects more to the subject of rural areas and girls were affected more than boys, The students of Kathmandu were more motivated to study mathematics than that of Arghakhanchi and Chitwan, The students of urban areas were more interested in the study of mathematics and the girls paid more attention for this study, The students of the rural areas were more affected by the use of instructional materials and girls paid more attention to the use of instructional materials.

Guragai (2001), did research on "A study of achievement in mathematics of primary level students of Morang and Dhankuta districts" with the objectives to compare the achievement in mathematics of primary level students between Morang and Dhankuta districts resembling Terai and Hilly region of Koshi 21 Zone. Researcher developed an achievement test from the prescribed curriculum of grade V. Four hundred students from twenty four schools were selected. Z-test was applied to conclude that Morang district surpassed Dhankuta district students in every aspect male, female, rural and urban.

Pant (2001), did a research work on "A study of achievement in mathematics at primary level in Doti district" with the aim to study the achievement level in mathematics of grade V students as a whole, by gender and location. Mathematics Achievement Test was prepared by the investor and administered on two hundred students, in six-government school. He concluded that the achievement level of fifth grade students in mathematics of Doti district was 44.16% and there were significant difference in the achievement among the rural schools' students and urban schools' students in mathematics.

Poudel (2001), did a research work on "A study on the effectiveness of class work while teaching geometry at the secondary level" with aim to investigate if the

class work turn to be effective while teaching geometry. The research conducted experimental studies. The researcher taught geometry to both the groups (experimental and control). The experimental group was taught the units class works entwined with the regular classroom whereas the control group was kept detached as far as possible classroom work activities. An achievement test was given. The t-test was used to conclude that experimental group did better than control group.

Yadav (2001), did a survey type research carried out on topic "A study on the effectiveness of the primary school teachers of the district of Sirha" with the objectives to explore the extent of effectiveness parameters in determining the effectiveness of primary school teachers and to compare the effectiveness of rural and urban primary school teachers. Twenty-eight teachers (twenty-two trained six semi-trained teachers) were as a sample. A questionnaire was prepared to solicit the opinions of the teachers. A classroom observation form was also developed to record the classroom situation and activities. U-test and z-test were applied to conduct that teachers were found to be effective. The effectiveness of urban teachers was not found to be significantly different from those of rural teachers.

Shrestha (2002), did research work depending upon the secondary data of the result of SLC examination on "A study of mathematics achievement of private and regular students in SLC examination." With the aims to identify the trend in mathematics achievement of the students attempting the SLC examination privately and regularly and to compare the overall mathematics achievement of private and regular students. Data were collected from Lalitpur district of the five years 2054 BS to 2058 BS. The t-test was applied to conclude that the trends in achievement of private and regular students in Lalitpur district in terms of mean scores were decreasing in both the cases in similar manner. The study concluded that mathematics achievement of the private and regular students did not differ in the examinations.

Sapkota (2011), has conducted the research on "Cause of failure in mathematics at school" of public school in Lalitpur district. The main objectives were to find the cause of failure in mathematics at secondary level and to identify the strategies taken by the school in improvement of mathematics achievement. The research design was qualitative as well as descriptive in nature. The respondents of the case study were students, corresponding parents, teacher and head teacher. For the

case six low achiever students including three boys and three girls were selected according to the different family background and performing in mathematics examination. To collect the primary and secondary data school documents, observation note and interview guidelines were use. The result of this research was classroom practice and curriculum was closely linked. Achievement of students always affected by different variables, such as schools learning environment, facilities of home, classroom environment, school facilities, mathematics instruction and assessment at classroom.

Paudel (2015), Studied on “Cause of low achievement in mathematics” with the objectives to find out of the cause of low achievement of grade 10 students in mathematics and to identify the strategies taken by school and teacher to improving mathematics achievement. He delimited his study on Surya Joti Secondary school Lamjung. He has used school documents, class observation and interview guidelines for data collection. It was found that low economic and education status of parents, poor learning environment in the classroom, student had negative attitude towards mathematics, school policy team hadn’t concerned about mathematics ,School policy and classroom management never encourage students are the main cause for the low achievement in mathematics.

Yadhav (2016), a research basis on the topic “Determinants of low achievement in mathematics learning at secondary level”. The purpose of the study was to find the school related factor responsible for low achievement in mathematics at secondary level. The researcher was adopted the mixed research in general and survey research design was followed in particular and questioner and interview were used as research tools. The major finding of this study was school related factor had more effect on low achievement in mathematics.

Marasinee (2017), has conducted the a research on cause of students low achievement in mathematics”. The main objectives were to find the cause of low achievement in mathematics and to analyse cause of student’s low achievement in mathematics. The research design was qualitative and case study approach. This study was conducted with the sample of three students of grade 10. The sample was chosen purposively according to the performance in mathematics and different family background of the case school. Direct interview with three low achiever students in

mathematics, perspective teacher and head teacher of the school. Collect the primary and secondary data school documents, observation and different theories produce the information and draw the conclusion of the study. This study found the socio economic factor, poor learning culture, negative parents and peer influences, negative learning attitude and poor facilities, classroom management, evaluation procedures, reinforcement and feedback in classroom, qualification and training teacher, irregularity of students, lack of teaching materials and poor interaction system are the main cause of low achievement in mathematics.

Karna (2018), a research basis on the topic “Achievement of mathematics and its causes”. The main objectives this study was to compare the achievement level of Badi and other students in mathematics and to explore the causes that affect achievement in mathematics of Badi students. The researcher was adopted the mixed research design approach conducted at Shree Sharada Secondary School, Shree Pravta Secondary School, Shree Chhinchu English Medium school and Deuti Viaya Mandhir Sadan, Bheriganga Municipality, Surkhet. He selected hundred students from four schools, interview four Badi students two Badi parents ,four mathematics teacher and four head teachers, observation five mathematics cases, analyzed and interpreted the data with help of z-test and ,theories and some related literatures. This study found that the interest of learners knowledge, teaching learning activities motivation, physical facilities, school environment ,home environment, parents education and culture and society were main cause of low achievement in mathematics.

Dhakal (2020), a research basis topic “Factors Affecting Academic Performance of Students at Community Secondary Schools in Nepal” This study examined the perception of the students on the academic performance at community secondary school in Tokha Municipality, Bagmati Province objective of this study examining the influence of school, teacher, student and parent related factor on students’ academic performance in secondary schools. A total of eighty (80) secondary schools students from five selected schools participated in this study. The study used purposive sampling. It employed quantitative data collection tools which included questionnaire survey. The data obtained through questionnaires were edited, categorized tallied, and tabulated. The data were analysed using descriptive statistics.

Percentage was characteristics of the respondents. The results indicated that the performance in the study area was determined by different factors.

Research Gap

Empirical review is the systematic literature and it examines past empirical studies to answer the particular research questions. The main purpose of the literature review is to identify the gaps in literature (Boote & Beile, 2005). After observing above literature related to mathematical concept used by particular community. I have found that many researches were done on mathematics practices in Government School.

Many researches and articles have been published on this topic. These studies emphasize the low performance of children. It was found that students were not evaluated on the basis of low performance only. In addition to promoting my research, I have also emphasized the low achievement of children. Weak students were found to be less interested in education. This research can be used to teach students in the right way only if they have knowledge of classroom behaviour, attachment to reading, their mannerisms, manners, etc.

Theoretical Literature Review

In the section, the researcher introduced the theoretical discussion which is relevant for the interpretation of the findings of the study. There are various learning theories related to children's learning and development. Some of them are classical conditioning, operant conditioning, trial and error, social learning, social development, constructivism, cognitive learning, socio-cultural, multiple intelligence and so on. From a contemporary constructivist perspective of mathematics education, personal experiences and previously learned knowledge and skills are, encouraged as components for understanding. Observations, hypothesis and conclusions are made tested and drawn within a social environment that allows sense to be made. Unreasonable or meaningless mathematical solution would be medical by cultural knowledge, and skills acquired in class could be used in real contexts. Increased understanding should result from mathematical tasks being linked to personal student experiences, and form the incorporation of the linguistic and culturally of students' lives. Basically, constructivism views that knowledge is not 'about' the world, but

rather constitutive of the world. Knowledge is not fixed object, it is constructed by an individual through his/her own experience. This theory of learning acknowledges that individual is active agents, they engage in their own knowledge construction by integrating new information into a meaningful way. Constructivist argue that it is impractical for teachers to make all the current decisions and dump the information to students without cling students in the decision process and accessing students' abilities to construct knowledge. The constructivist approach to mathematics learning is argued to lead understanding of mathematics when applied to the physical, social and cultural experiences and developmental contexts of the learner whereas traditional mathematics' use of highly structured worksheets, step-wise rulers practice examples, and formulaic solutions to word-problems has been criticized for its poor survival of understanding and application beyond the classroom. Conditions of classroom that foster a constructivist approach involve the use of realistic problems and conditions and the use of multiple perspectives, active engagement, group participation, frequent interaction and feedback, contexts that connect learning to real world, and integration of assessment into instruction. Social constructivism is focused much on learning through cooperative group learning. It emphasizes the importance of culture and context in understanding what occurs in society and constructing knowledge based on this understanding. Social constructivism is based on specific assumptions about reality, knowledge and learning. To understand and apply models of instruction that are rooted in the perspectives of social constructivists, it is important to know the premises that underlie them. Social constructivists believe that reality is constructed through human activity. Member of society together invent the properties of the world. For the social constructivist, reality cannot be discovered that; it doesn't exist prior to its social invention.

Theory of Fear

Holt (1964) in his book, "How children fail" postulated that children fail because of fear in taught school. In "How children fail", John Holt states his belief that children love to learn but hate to be taught, His experience in the class room as a teacher and as a researcher brought him conclude that every child is intelligent. However the children become unintelligent because they are accustomed by teacher and schools to strive only for teacher approval and thee, "right" answer and

consequently forget everything else. This education system, children see no value in thinking discovery and understanding but only in playing the pore game of school. Children believe that they must please and obey the teacher, the adults, all the costs. They learn how to manipulate teacher to gain clues about what the teacher really wants. Through the teacher's body language, facial expression and other clues they learn what might be the right answer. They mumble, straddle the answer, get the teacher to answer their own question and take wild guesses while waiting to see what happens all in order to increase the change for a right answer.

They fear wrong answer and shy away from challenges because they may not have the right answer. This fear which rules them in that school setting does their thinking and learning a great disservice. A teacher's job is to help them overcome their fears of failure and deplore the problem for real learning. So often, teacher are doing the opposite building children's fears up to monumental proportions .children need to see failure in honourable and that it is helps them construct meaning. It should not be seen as humiliating, but as a step to real learning. Being a faired of mistake, they never try to understand their own mistakes and cannot and will not try to understand when their thinking is faculty.

Theory of Educational Productivity

Walberg (1981), proposed a 'Theory of Educational Productivity' that has its own theoretical foundation. Walberg's theory requires optimization of nine factors to increase student's achievement of cognitive and effective outcomes. Walberg et al. have identified key variable that affect students outcomes: student ability/prior achievement, motivation, age/developmental level, quality of instruction, quantity of instruction, classroom climate, home environment, peer group and exposure to mass media outside of school. Among them they three variables (ability, motivation, and age) reflect characteristics of the student. The fort and fifth variables (classroom climate, home environment, peer group, and exposure to media) represent aspects of psychological environment. Clearly student's characteristics are important for school learning, but they only comprise a portion of the learning equation.

More recently, Walberg (1993) organized the relevant school learning knowledge based in to major construct domains(State and District Government and

Organization, Home and Community context, school demographics, Culture, Climate, policies and Practices. design and delivery of curriculum and instruction, classroom practices, learner characteristics) and attempted to establish the relative importance of 228 variables in predicting academic domains. Using a variety of methods, the authors concluded that psychological, instructional and home environment characteristics (“proximal” variable) have a more significant impact on achievement than variables such as state-, district-, or school-level policy and demographics.

Socio-Cultural Theory

Socio-cultural theory grew from the work of seminal psychologist Lev Vygotsky (1978), for the development of higher order who believed that parents, caregivers, peers and the culture at large were responsible for the development of higher order functions. According to Vygotsky, “Every function in the child’s cultural development appears twice: first on the social level, and next one is the individual level; first between people (inter psychological) and then inside the child (intra psychological). This applies equally to voluntary attention to logical memory and to the formation of concepts. All the higher function originates as actual relationship between individuals.”

Vygotsky was a contemporary of other great thinkers such as Freud, Skinner, and Piaget, but his early death at age 38 and suppression of his work in Stalinist Russia left him in relative obscurity until fairly recently. As his work become more widely published, his ideas have grown increasingly influential in areas including child development, cognitive psychology and education’s-cultural theory focuses not only how adults and peers influence individual learning ,but also on how cultural beliefs and attitudes impact how instruction and learning take place.

Conceptual Framework

This case study related to the Cause of failure in mathematics education in Baglung district. The target of this study was to identify the cause of failure in mathematics after teaching this subject. The researcher tried to find what the causes of failure in mathematics education are.

The cause of failure in mathematics education leads the data collection and analysis for this study was given as below:

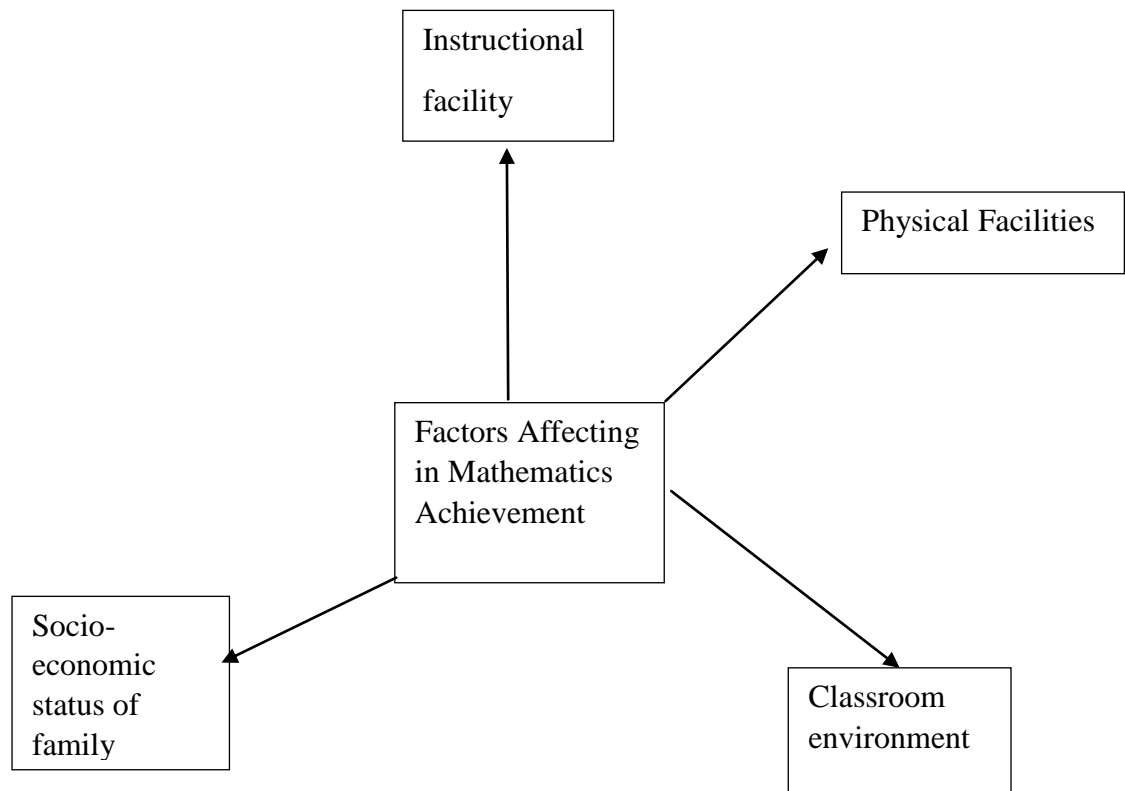


Fig:1 CAUSES OF LOW PERFORMANCE OF SECONDARY LEVEL STUDENTS IN MATHEMATICS

The researcher was arranged the factors affecting in mathematics achievement one after another step in above framework. The researcher was developed the framework on the basis of the basis of the selected schools' background, achievement in SLC result, schools' environment, ability of teachers, located area, family background, relationship between school and guardian, school's policies, etc. the researcher was collected and analyzed the data on the basis of the framework in systematic and formatively ways.

CHAPTER III

METHODS AND PROCEDURES

This chapter deals with the research methodology, which were used in this research. Research methodology is a strategy which determines how the research becomes systematically complete. Research doesn't mean only to collect data but also to use the appropriate research method. In this chapter researcher discusses about various aspects of the study such as design of the study, selection of the case respondents, data collection instruments, data collection procedure and data analysis procedure.

Design of the Study

Research design is plans and the procedures for research (Creswell,2008). This is the case study to find the causes of low performance of secondary level students in Mathematics. So, qualitative technique was adopted in this study. Qualitative research can be regarded as 'naturalistic inquiry' in a sense that it is concerned in natural setting by trying to avoid any intentional manipulations and distortion of the environment of the informants by researcher.

Research Site

As a case study site the schools are selected on the basis of variations of culture and languages. The schools are situated in multilingual and multicultural society, where the students are from different culture and background. The students have economically different social and economic background as well. The researcher had selected Shree Devasthan Secondary School as a study site. The case school had selected on the basis of convenience sampling.

Selection of Case Respondent

The participants were the low achiever student on mathematics. Also the participant are the mathematics teacher, head teacher of the sample school and the parents of selected student school sample schools. Only six student who have low performance on mathematics were selected from the sample school. Out of six

participant there are three boys and three girls from different ethnic groups and from different social and culture background.

Tool for the Data Collection

One of the most important steps of any research is collection of data. So this research was mostly focus on collecting convincing and authentic qualitative data from the participant. Every aspect of the study was analysed and studied based on data collection techniques. There are different tool for the qualitative research design. To collect primary and secondary data for this study the following tools was used.

Observation form. The direct observation form was used to collect the information about the teacher-student interaction, teaching- learning activities, classroom environment etc. In the observation form the researcher had focused on different behaviours such as, school's facility, student teacher activities , and methodology and teaching materials used during teaching learning activities. All the factors were related to classroom teaching learning activities. In data collection procedure the classroom activities of one mathematics teacher were observed up to 15 days.

Interview guidelines. Semi- structured interview guidelines were adopted in this study. These guidelines were used to take interview form case students, head teacher, maths teacher and parents of selected students, which was prepared on the basis of objectives of the study, conceptual framework and theoretical literature review related to this study.

School document. Students attendance register, school result sheet or mark ledger and the other records provided by case respondents and other related documents was also used as tools in this study.

Data Collection Procedure

Data and information was collected by using interviews schedule, classroom observation and school document. The school document was studied from marks ledger of students, student-teacher profile, physical facilities and others relevant document. The researcher was observed the classroom being presented in the school with mathematics teacher and student of grade X for 15 days of that selected schools.

The researcher was observed the behaviour of both teacher and students during teaching learning activities. The interview was taken with students , parents mathematics teacher. All answers was notated down during the course of interview , focused point of interview on mathematics achievement of students, school facilities, vision of school towards low achiever student, policies that were adopted by school for low achiever student and so on was conducted.

Data Analysis Procedure

After collecting data from selected sample using interview guidelines, classroom observation from and different school documents related to the case respondents, recorded data were analysed , interpreted and presented descriptively. To analyse data, descriptive and analysis method was adopted based on triangulation method. The data collected from interview , classroom observation were analysed description on the basis of conceptual framework. Firstly, the researcher had constructed different them based one the conceptual framework , researcher had made interview guideline and classroom observation from based on these themes . After that, researcher was collected required data from student , head teacher, mathematics teacher and guidelines using these tools. The date of collection from different respondents have been categorized according to the category of respondents and the different them and analysed descriptively on the as per themes in the conceptual framework. After analysing the collected data, we use triangulation method to conclude the research.

Ethical Considerations

Ethical consideration is the integral part of the process of qualitative research design. The major ethical consideration of this research were informed to consents, respect privacy of respondents, do not harm the beneficence of respondents, respect for anonymity and confidentiality, Informing to consents is one of the important aspects of this research means by which respondents right to autonomy is strictly protected. Informed consent of this research refers to incorporate the right of autonomous individuals through self-determination and also to protect personal liberty and veracity.

The issue of anonymity and confidentiality of respondents is related to the rights of beneficence. I maintained confidentiality that goes beyond ordinary loyalty. Each and every respondent were free from being pressurized by the researcher and name of the respondents will not be disclosed. But the information related to the mathematics knowledge which is desired by the objective of this research is documents in the findings of this study. Therefore, all the information given by respondents is treated as confidential and will not be disclosed by the researcher to third party unless required to do so by the law.

CHAPTER IV

ANALYSIS AND INTERPRETATION OF DATA

This chapter deals with the analysis and interpretation of the collected information related to the research. The research studied the schools document such as marks ledger, attendance, teacher profile and the records of the sampled students as well. Also the researched observed mathematics class of grade X being participated with mathematics teacher regularly for 15 days during teaching learning activities based on observation form. Then the classroom observation note was prepared on the basis of the classroom observation. Every activities and behaviour of the student and teacher were carefully observed and noted . The direct interview was taken to the sampled student, mathematics teacher, head teacher, and parents of sampled students. The responses of the respondents during face to face interview were carefully noted. There were no limitation for the respondent's responses. The data were analysed with the help of collated data/information from observation interview and school record.

Background of the Case Site

For this research, researcher has chosen the Baglung district to get the exact data for the particular topic Baglung district lies in the province no 4 or federal republic of Nepal. It is one of the Hill district situated in the western part of Nepal. The climate of baglung district neither cold nor hot which is very good for our healthy life. Shree Devasthan higher secondary school is the one of the famous educational institution which is located in Nisi khola ga.pa municipality. It is surrounded by two river with beautiful hills. Nepal is known as multi-cultural, multi-religious, multi-lingual country. Therefore, such diversities should be considered and observed in the every part of the nation on general and educational field in particular. Similarly, the family background and learning environment of the school of the school were different from hilly region to terai. So that, students can't understand the language of migrated region, therefore, the language is also main cause of low achievement in mathematics.

Most of the parents are farmers. Their main occupation is farming. Therefore, they are mainly based on agriculture. Likewise, some of the parents work in the government services. In spite of poor family background as well as economic status of

parents hinder over the learning achievements of students in mathematics. Therefore, the economic condition of parents is also main causes of low achievement in mathematics.

In the previous days the infrastructure of the school was very poor but it is improved now a days. Therefore physical environment of the school also affects the learning achievements in the secondary level. Regarding sample school as Devasthan higher secondary school it has 3 building with 28 rooms and one beautiful playground. It has sufficient area of land for school but the achievement of mathematics is very poor according to SEE result. In the School there are 67 students in grade 10, but the researcher had selected six low achiever students from grade ten.

Coming days learning achievement of mathematics is very poor and low day by day. Due to culture, language , geographical region economics as well as family background of the parents, the achievement of mathematics is very poor in the Devasthan higher secondary school in a particular . the government should provide sufficient teaching and learning material to those low achiever students.

Physical and Instructional Facility

Physical and instructional facilities are also the important factor which directly link teaching learning environment of school. It Plays a vital role for improvement of student's achievement in mathematics learning.

Analysing the data there were enough physical infrastructure like building , classroom, ground etc. But there were not enough instructional materials in school, also no guidance for teacher for better performance of students. Physical infrastructure and environment of school consider as an essential part of school environment of school consider as an essential part of school environment however there is no conclusive evidence of the above facts.

Thus the role of physical and instructional facilities plays a significant role in the better performance of school. So without managing good physical and instructional facilities in school , one can't improve the students' performance. Therefore it is also the responsible factor for causes of low achievement in mathematics.

The physical facilities of schools play vital role in the sound environment and quality education. That helps to improve the achievement of students in mathematics learning. The classroom is considered as a heart and the school as the system. The school is located within the area of around 1.5 bigha, the schools building are surrounded by compound walls, 3separated building with 27 rooms which are painted as well as ventilated as well. ICT lab and library etc. there was the library but not there are not books related to mathematics reading others than textbook. The school had also a science lab. The school had about 600 students and 29 teaching staffs and 5 non- teaching staffs. The school had no an provision for hostel and coaching class for SLC/SEE appearing students as well as others. Toilet and drinking water and well playground facilities were inside the school compound.

The responses of responding about physical and instruction facilities were as follows

According to Head teacher, The schools has sufficient physical infrastructure but we haven't teaching materials for mathematics. The school had science lab but not enough materials, school has ICT lab and library but not reference books and practice books related to mathematics. But the school is planning to manage those required materials for the better education.

Above view shows that, there was sufficient infrastructure in the school, but according to the head teacher's point of view, they don't have sufficient teaching learning materials for mathematics. In spite of science lab, library and other facilities in the school, students get chance to involve in the different activities. But in the library there were no reference books and practice books related books related to mathematics. Therefore, the achievement of student at mathematics was very poor.

By supporting his view the mathematics teacher also says, "The school has nit any reference books related to mathematics. Only textbook is read. Also school has no teaching materials; I am trying to use materials available in local area but they are not enough. I encourage students to study reference and practice books from different sources".

Similarly, according to mathematics teacher's point of view, there were no reference books in the library which were related to mathematics. Due to lack of

sufficient related materials in the school he/she cannot teach effectively. So that the achievement of students at mathematics was low rather than other subjects, it shows that the teacher used no cost low cost materials while teaching mathematics but such materials are not enough for better achievement.

Also the students are agreed with head teacher and mathematics teacher by saying, “Our school has good physical facilities; furniture, toilet, drinking water etc. also, our school has a library but there is not reading materials related to mathematics.”

Likewise, the student’s views show that, there were enough infrastructure in the school but they didn’t have sufficient reading materials in the school’s library, so that their learning achievement at mathematics was very poor.

Also the mathematics teacher said, ’’The school has no any sources for instructional materials and educational promotions. The educational free is the main sources of fund but the guardians are not able for this, the found provided by the donors is the basis of physical.’’

From the above facts, the school has well organized in terms of external physical facility but it has not sufficient instructional teaching materials instructional materials make classroom more interesting and meaningful for learning. But only extra physical infrastructure of the school is not sufficient for quality education . Instructional materials plays vital role for quality learning . from above views shown that the main causes of low achievement at mathematics was lack of sufficient teaching and learning materials related with the subject.

Classroom Environment

The classroom environment includes the two important aspects. The first is physical environment it is includes the location of room , arrangement of desk benches ,chair, position of white board , facilities such as fan, ventilation etc. Another is psychological it refers to the relationship of students and teacher to each other . As well as classroom environment includes teaching technique of the teacher , methods all psychological and educational factor related to teaching learning activities.

For collecting data, the researcher was observed the classroom environment participating with mathematics teacher while teaching mathematics about 15 days.

In the observed classes, mathematics teacher went into the class, than after researcher enter in the classroom with the permission of subject teacher, the all the students said good morning sir. It was noticed that the school environment was respectable to the teacher. Among 69 students there were 50 % in the classroom. The desk and benches were sufficient for them but not well managed. The white board was small and so nice. Usually teacher opened the book and asked homework but only few students done their homework but not properly. On the other hand the teacher started teaching without even warm up and reviewed the previous lesson wrote the question from the book and solved the problem on the board. Teacher taught his own way but the maximum students were busy in talking to each other with peers. They have no concentration towards the study. It was like as the student had no interest about the lesson but teacher did not try to control and motivation them.

Then the writes the question from exercise and solved it. After he gave one similar question to students for classwork. Few students try to solve the problem but teacher did not show any response toward these types of activities of students. Lastly, he gave some questions as homework and teacher existed from the classroom without summarized the lesson and without evaluation. These types of classroom activities were repeated day to day. Teacher had not a prepared plan, did not use any materials, he did not try to control the students noises. Only teacher came into the classroom and solved the question after that existed from class. Also student did not try to complete homework, classwork the had not pay concentration towards study.

From above observation, it indicates that physical environment of a classroom was not good. For example furniture were sufficient but not well manage while board was also small which was not enough in the case of number of student. Therefore physical environment of the classroom was hampered to increase and improve students learning achievements. It can be said that physical environment is main factor affecting teaching and learning mathematics.

In the same way, the psychological environment of the classroom was good. There was good relationship between teachers students. Teachers were respected but

they could not warm up to motivate their students . Furthermore, the researcher also found that, the way of teaching was also not good. Students could not chance to practice a lot in the classroom they were talked while there teacher taught in the classroom. Likewise, the researcher also found that the classroom was also noisily, she/he could not control. It was also found the neither the teacher repeated the previous lesson nor students done their homework. It indicates that the psychological environment also plays vital role to improve students learning achievements in a particular subject.

By supporting this views the head teachers says, ” There is a good management in classroom, we are trying to improve classroom management but there is not being regulated effectively because we have large number of students.”

Similarly the mathematics teacher says, ” There is small white board in classroom and many students in a classroom. So we are unable to manage effective classroom management.”

Similarly the teacher says, ” Many students getting under poverty, so they cannot afford necessary materials like copy, book, pens with them and they made some noises,”

But the students were not agreed with this views. One of the students says, “ Our class is in good facility. But many of them make noise, So interested students cannot learn properly also.”

Furthermore, the researcher was also found that, the mathematics teacher only focused on text book rather than practice books because there were not sufficient such materials. Moreover, students also did not pay attention on classroom so that the learning achievements of mathematics was very poor.

Above information also shows that, head teacher, mathematics teacher and grade ten students were not fully satisfy with classroom environment as physical and psychological environment of the classroom. Likewise large number of students, poor family background of the students, it was difficult to improve learning achievement of student in materials.

As well as it was found that from above information collected from different sources the researcher found different understanding students were came from different cultural and economic background they have different interest towards mathematics they made some noise in the in the classroom as well as there were poor in basic knowledge, so they could not understand the contents of secondary level, so the made noise. Teacher also unable to made interesting class. He neglected the students noise he had no interest to control the students noise. The management of benches and desks were sufficient for students but classroom with many student automatically made noise.

At the beginning of the lesson the teacher directly entered into the topic without knowing the understanding of student. As well as teaching materials is the best instrument in the period of teaching learning activities. The subject teacher can easily explained about the teaching lesson by the using the effective materials, besides textbook there were not any teaching material were used during teaching learning activities.

Teaching strategy plays a great role in the achievement of students. As well as social construction says that motivation plays great role for the learning this makes classroom and should provide positive reinforcement. The positive reinforcement is always emphasizing is good learning but the school has not adopted this approach in classroom teaching of mathematics . Thus it concludes that teaching learning process of school in the major aspects for the betterment of students achievement teacher should play attention to improve the condition of teaching and learning environment.

Thus the traditional classroom is also a responsible factor for the low achievement in mathematics. Further constructivism encourage the student to involve themselves in activities and use technique of learner cantered , group work discussion learning by doing to gain hight achievement.

Socio-Economic Status of family

The major aspect which affects the learning of students is the task they do in their home.

In Nepali public schools, it is not a new case to do more household work than school's homework by children. When student does not get a time to study on home because of the overload of house work, it hampers in the study. In classroom, student comes from different educational, cultural, economic, and lingual background. And it is very challenging to adjust and teach those divers children. So, socio-economic status of family is consider as one of the cause of low achievement.

About socio economic status of family of student the head teacher says, "Students have low economic background parents are illiterate and they have negative thinking towards learning , so children have to help their parent's in house hold work."

By supporting this views, the mathematics teacher says, "parents have low economic status. So , they have focused their children to earn money. Parents are illiterate and they are not aware of the children's study."

In this regards one of the students says, "My father is a shopkeeper. Sometime I have to stay in shop even, I have to go market for load goods."

The similar version of about this problem one of the parents says, "My health is not well. He has a great responsibility for the family. He spends all the time for household activities Even he has to plough in the field."

From the above opinion of the student and teacher, the researcher was found that students could not get time to do their parents socio-economics and cultural background, Their parents were illiterate so that they cannot understanding their children's problem. Furthermore, according to the head teacher point of the view the researcher found that parents and negative impact on teaching and learning therefore , they forced to involved their children in household work. So that the achievements of mathematics was very poor In grade X.

Likewise, the researcher also asked parents about the study of their children at home. Most of parents were illiterate and they were not conscious and aware towards their children's study. Moreover according to the mathematics teachers point of view researcher also found that parents had low income so they had forced their children to join hands and mouth. In the same way , the researcher was also found that some of

the students were from high economy family background so that they were also busy to help their parents at house hold work. Similarly, some of the students had busy to care their parents because their parents were suffering from different sorts of diseases.

Thus most of the students were poor and weak at mathematics due to their parents economic status and household works. Also in the question of researcher ‘‘How is the parent’s education influences in study? The student says, ‘‘My father and mother’s academic qualification is under ten class. So they do not understand the problem of mathematics. We do not get any for doing homework and other academic study.’’

Supporting students view parents says, ‘‘we are illiterate, so we can’t teach him/her.’’

From above views of students and parents , it is concludes that most of the parents are uneducated and they have lack of awareness regarding education that also impacts in the performance of children in mathematics. Education of family members plays important role in education of students. Uneducated family cannot guide their child properly. From the above views students do not get time to study. In mathematics practise plays vital role, but home environment of students is not good for doing practice. They haven’t enough time to do practice at home because of household problems.

Due to academic qualification of parents students were weak in mathematics because they couldn’t get further guidance which they had done their homework. Therefore, students couldn’t get change to practice as for as possible. So, that the learning achievement of students was very poor at mathematics on secondary level. Moreover, the researcher was also found that student’s parents were illiterate so that they couldn’t teach their children whenever they felt difficulty. Thus, the researcher has concluded that educational qualification of parents also plays pivotal for to improve students learning achievement.

The responses about the effect of economic status in learning :

According to parents, "it is very hard to pay tuition fees and for other particular materials." By supporting this view students says, "We can't afford

coaching fee and tuition fees." The similar version of mathematics teacher about this problem as, "Students are unable to buy extra materials like practice book, they do not able to pay fee for tuition."

From the above response, the researcher was also found that most of the students were from poor background so that they were not able to pay tuition fee. So that they couldn't get chance to take part in coaching as well as tuition classes. Therefore, the learning achievement of those students who were not takes part I tuition classes had very poor then students. Similarly, the researcher was also found that the students who were very poor family background they couldn't buy practice book and other reference materials. So that, the students were from poor background couldn't able to go through extra materials than text book.

These views indicate that many students financial condition is poor and they are unable to afford the fees and others. They were unable to pay fees for extra classes, so they become weak in mathematics. Therefore, economic status is another causes of low achievement of students in mathematics.

Evaluation and Reinforcement Process

Teaching is a science as well as an art. A well trained teacher only can use different teaching techniques in the classroom to address all types of problems of different students. Before teaching any lesson, systematic plan is necessary to meet a goal. The plan about objective of lesson, activities to be performed at classroom, techniques of students engagement in cooperative tasks and assessment techniques to be applied in and outside of classroom are of great importance of students into classroom had usually been implemented and measured using limited forms of tasks generally referred as "Paper pencil test" emphasizing logical process of calculation deduction and organization skills. Also the teacher had applied the questioning techniques during assessment of students.

The researcher asked the questions about the evaluation system to be head teacher, math teacher and students and their respective parents.

The head teacher says about evaluation system of this school," The school conduct examination : first terminals, half yearly and annual exam three times in a

year. But other tests are not used and all other tools of evaluation process depend upon the subject teacher."

Supporting head teacher's view mathematics teacher also says,

" Terminals exam, half yearly exam and annual exams were conducted by school. But other techniques are not used."

From above views there were only summative types of evaluations were used. For betterment of students learning in mathematics different approaches of evaluation are used. In this question, students says, *"Teacher gives homework but we don't care about doing homework as well as teacher also careless about to check. Written exams three times a year conducted by school."*

From the above opinions of head teacher, students and mathematics teacher the researcher was found that the evaluation system was only based on paper pencil test. According to their point of view, they were conducted first terminal, half yearly and annual exam in thrice within a year. But other tools of test and evaluation were not used such as quiz contest, group work, project work and group discussion etc. so that the students couldn't get chance to involve extracurricular activities which were very beneficial for improving learning achievement of the students. Furthermore, the researcher was also found that the students didn't complete and do their homework. Moreover, the teacher was not aware to those students who didn't do their homework. Thus, it can be concluded that evaluation system, tools of test, extra-curricular activities are also important for better learning. Such tools and activities plays vital role to improve learning achievement of students in mathematics.

Evaluation as well as reinforcement is one of the most important aspects learning. The view of head teacher, math teacher and students showed that there is lack of regular assessment system in the school. There was also a lack of reinforcement and encouragement. School as well as parents are also careless about their children's achievement, which shown by head teachers view, *"We provide students' progress card at the end of periodic exam. But parents are not interested towards their children progress. Nobody comes to school for asking their children's achievement, their improvement."* In similar way mathematics teacher also says, *" Parents had no interest about their child's study achievement."*

From above view of head teacher and mathematics teacher researcher found that students as well as guardians has no interest about children's study because if parents had interest about their child's learning improvement they ask this with head teacher, mathematics teacher about improvement.

In this topic parents says, " We do not go to school to consult about our children's achievement and their study to the teacher."

The above sources show that, most of the parents were careless towards their children's progress. The parents of students had never consulted to the math teacher about their children's progress. Similarly, the researcher was also found that parents as well as students were not go to school to know about their achievement in the case of mathematics. Moreover, according to the head teacher point of view, the school provide mark sheet at the end of the annual examination but no one parents came to take mark-sheet in the school. It shows that parents were not responsible towards their children's learning achievement. Thus, the researcher can said that the role of parents is very important in the case of difficult subject in the secondary level. Parents should encourage and motivate their children to increase competency, capacity, confidence and understanding the problem themselves. They can improve themselves.

Researcher found that there was a communication gap between parents and school. Every parent does not regularly consult with teachers about their children's progress. Thus it could be said that the school maintain a proper communication with parents. When parent's opinion was asked on effect of their education on children's achievement, *one of the parents says, "I'm illiterate but sometimes my father-in-law can guide the children in the simple problem."* By supporting this view another parents says, *" We are illiterate and the children are left to themselves for their homework."*

Form the above responses of respondents, researcher found that the literate parents help their children yet this is not sufficient for secondary level. But illiterate one simply fulfils their duties by sending by sending their children to school. So this study found that the parents education can be most essential motivation and support to improve the students' performance level. If there is no proper guidance's of the guardian at home they become careless in their study. Parents support is one of the

great reinforcement for children as well as it plays great role for motivation. According to the parent's point of view, they were illiterate so that they couldn't guide their children for further improvement of their secondary level children. But some of the parents were educated though they would help their children while felt difficulty.

Teacher Qualification and Training

The research was focused on finding the causes of low achievement of students in mathematics. It was found during the study that many students are being failed in mathematics. The research found that the teachers knowledge regarding particular subject matter is not sufficient but also they need to have pedagogical knowledge and ability to know the psychology condition of children and their interest. Teacher competencies in there are closely linked to student thinking, understanding and ;earning capability at mathematics and understanding it.

There is no doubt that for the student best achievement in mathematics requires a firm understanding of a teacher in the subject matter and new techniques to make the subject matter easy for the all kinds of students in simple language.

Recurrent teacher training has been adopted as major strategies for enhancing the quality of students achievement. It is assumed that increased opportunity for professional development through recurrent training would lead to improve professionalism deduction and motivation which will positively contribute to student learning. There could be many factors causing a regularly relationship training and student performance.

The view of mathematics teacher about teacher competence in mathematics education were "School hasn't provide any refresher training for our knowledge and betterment of teaching even though I am trained teacher. School does not have sufficient teaching material and reference book. Training and qualification are most important factor in development of teacher competency.

The view indicates that there is lack of teacher competency in math education. There was not any referencing and need based training. So, the case school should improve this problem for betterment. The school does not provide any opportunities for the professional development of teacher.

By supporting this view the head teacher also says, "we are unable to collect sufficient materials reference book because of lack of economic sources and we are not able to provide referencing training for the teacher, we have not any permanent economic sources".

The above views reflect that most of the teacher were trained but they didn't have in service teacher training for the school site so they were unable to improve the learning achievement of mathematics. Similarly, there were not sufficient teaching and learning materials in the school. Due to poor reference materials they didn't improve mathematics result in the case of SEE examination. Furthermore, the stake holder has head teacher point of view they were not able to collect reference material due to poor and low income of their school. Similarly, they were not able to provide refresher training to their teacher who taught mathematics in the secondary level. Likewise, they didn't have permanent economic sources for school. Thus, the researcher can say that reference material, in service teacher training and economic condition of the school play important rule for better learning achievement of the students. They are directly related with each other own absent of one other couldn't be able to fulfil.

The observation was to place during the case study; it was done at mathematics in class x in the observation day, the math teacher enter in the classroom and use the same regular materials. He wrote the topic "Problems including three set" and writes the $n(A \cup B \cup C) = n(A) + n(B) + n(C) - n(A \cap B) - n(B \cap C) - n(A \cap C) + n(A \cap B \cap C)$ after that he wrote the problem from exercise and solve step to step in white board. But students were busy on side talking. After that teacher gave same problem to the student for classwork but only few student try to solve that problem and show teacher for correction but the other students were busy on whispering and teacher didn't care. The teacher didn't response them at all rather he turned again towards whiteboard to solve another problem, at the end, teacher gave a problem to solve at home and he left out the class.

The above observation shows that the teacher taught through deductive way. At first teacher presented formula and then he entered in the exercise base question. Similarly, the teacher used teacher centred way so that the student were busy to talk with each other

While the teacher taught in classroom. Likewise, the teacher provide same problem further practice but only few student did and others were busy to talk with their friends, furthermore, the researcher was also found that the teacher didn't care those student who were busy to talk with each other in the classroom. The teacher had sort of exercise on the board and didn't pay attention toward students. In the same way, the teacher provided homework and left the classroom. It can be conclude that teacher should pay attention toward his/her student while teaching otherwise student while teaching otherwise student lost opportunity of learning. Classroom environment hampers the learning which is directly related with learning achievement of the students. Therefore, teacher role is very essential while teaching in classroom for better performance the student. The teacher should provide exposure to those students who are very poor in mathematics. That is why they can improve themselves.

Similarly, researcher observe few other classes and found that there was no change in teacher activities. By above observation, there is no any motivation and reinforcement class from teacher as well. Teacher was trying to use student centre method by giving some questions to student for self-practice but not properly. This shows that there is no sufficient teacher competency and interaction method with student in the classroom.

Although the teacher considered being the main facilitator of student while teaching learning activities inside the classroom, there was a poor condition of teaching delivering to the student by math teacher, and there was no any subjective teaching training for researcher as the revised course so it is also the main cause of low achievement of mathematics. Whither teachers are teaching in the classroom, students are busy in side talking and teaching each other.

Researcher asked "why don't you try to control the noise in the classroom?" on occasion mathematics teacher replied, "it is difficult to motivate the secondary level student by telling stories tells, jokes and other funny chats because they have already familiar most of the terms from mobile, internet and other social media. It is not the time to scold and under pressure because it has the new government policy from the post. It has declare, children oriented teaching learning environment, fearless learning plan and other self-learning discipline are generate day by day. Actually, secondary level is not the time for motivate in learning they must have innate, inborn

desirous, interest in learning new things". As well as he said, "student didn't get the fundamental knowledge and skill from the junior classes. Actually they have the lack of fundamental skill to matched the secondary level. Due to this it is much difficult to learn mathematic in this level".

Knowledge and skills must be developed from the lower classes. If they didn't have their habitual concentrating power to reading and writing, it is difficult to draw the affection in such field in term of study. That has main cause of the problem to teach in secondary level. Simply moral behaviour and social function are learn from the young age. How to teach? How to motivate them? And how do we convince them? It is not easy task for subject teacher. So the authorized agency, educational researcher and expert most manage the training seminar and other skill developing program to develop the professional skills. So that teacher are acrylate difference types of psychomotor aspect according to the need of time.

Time Spent for Practice

It was found that teaching learning process is completely based on traditional teaching for good and quality learning and good and bad result. Students activeness was the vital thing if some good students want to learn something. Unless the student study actively by themselves, teacher's teaching only cannot be sufficient. As we have the famous saying 'practise makes man perfect'. Practise is the main and basic thing in mathematics.

It is also important to do reputation of the all chapter by students at home to remained the thing that they study in the classroom. Constructivist suggest that learning is more effective when a student is actively engaged in the learning process(Acharya,2072). So, the students active participation in class, their interaction with teachers and repetition of the ideas in the home are the essential things for best result of the students.

Another thing that, student have to do classwork and homework and has to involve in group discussion. If the students have any confusion they have to ask either with friends or with teachers without any hesitation. About activeness and their practise and tasks here are some responses which are as follow.

Mathematics teacher says, "I scold the students as much as I can, but student do not do their homework and they do not give attention in the classroom while teaching."

On supporting the above views head teacher says, "Students activeness on the study in the classroom and the children's study time in the home is decreasing day to day."

Accepting these views of math teacher and head teacher students says, "I do not want to study math and I feel it must difficult to ready it." In similar way another student say, "I feel so difficult so, I do not do task at home and I do not do task at home and I don't get any guidance from anyone at home."

As well as the parent's views on their student's activeness as, " we never see our child studying at home. We do not tell him to do household work yet he/she does not give time to study."

From, above responses, the researcher was found that the students were scolded but they did not complete their homework. Similarly, they did not pay attention in the classroom while he/she taught in the classroom. Likewise the researcher was also found that students did not provide a lot time for practise in the classroom as well as at their home. Furthermore they were decreased time for practise day by day. Moreover , according to the student point of view the researcher was found that student left mathematics as a very subject and complex subject the other one so that they did not pay attention towards it. They did not get any feedback and further guidance at home. According to parent's point of view, the researcher was found that children never had done their homework even thought their parents did not tell them household work.

The conclude that, maximum number of students have shared their thought as mathematics as a hard subject. Student has no interest towards study mathematics. It is concluded that children are more interested on entertainment activities rather than academic study. Because students did not show their interest even they had no burden of household work. The above responses show that the role of the student was passive, class was totally delimited by teacher. Social constructivism demands that the learner should plays an active role in the learning process, It also emphasis on

more students cantered approach in classroom but the case school has not adopted this approach classroom teaching, As well as students should give more concentration also time to practise mathematics than other. Therefore practise helps to increase achievement of mathematics. Students are active learners and they construct knowledge for themselves. Therefore the parents as well as teacher should provide sufficient time for practice.

Also teacher have to apply different teaching methods in teaching for student centred approach and to have effective teaching learning activities and to get better result. Also students must be centred and interactive with the teacher inside and outside the classroom. There is a lack of active participation between student-student and student-teacher. So, active participation should be compulsory for effective performance of students. Hence participation in classroom and time spend of students in practise is also the important factor for better performance of students. Thus, students participation in the classroom, their activeness, and their focused plays great role in students achievement. Only few students were doing homework and class work that is ultimately leading to the low achievement of students at mathematics.

The researcher asked the question about the achievement of students to the head teacher, math teacher, student and their respective parents. The responses as follows;

*" The mathematics achievement of students in mathematics is very low."-
Mathematics Teacher*

" We usually fail in mathematics because it is hard"-Student view

Above data shows that the achievement of mathematics was not satisfied. Similarly, the achievement of mathematics was very low. Mathematics was very hard and difficult for the student therefore, maximum number of students was failed in the mathematics, thus it can be said that, the achievement of student in mathematics is very low because the students felt very hard and sufficient to read mathematics subject, also the teacher do not teach every chapter in effective way and they not used teaching materials according to the chapters.

Students are so passive in learning new things. They do not have little conscious in teaching learning sequence. *On the sense the headmaster said, " they are very poor in economic status, in terms of fulfil the daily needs and requirements forcefully engage in domestic tasks and search other income oriented profession instead of going to school. They get something if they engage in work but they do not get at once by means of reading. If , they directly participate in work that facilitate up bring the child and facing the easiness of feeding. Due to this, their mind diverts to the non-academic environment."*

For the supposition of this statement mathematics teacher said, " Majority of the students are going to 'kalapahad" and some are fully engaged in labour task in local area. Their main function is to earn money and solve the domestic problem. Due to this they are deprive of educations through money."

According to the students, "we do domestic work as a whole day so we do not have a time to read and write. Due to this we feel mathematics is more complicated than the other with lack of regular practise. After that we did not interest in study."

On supporting this view guardians said, "we encourage our child to read and write but we are unable to guide them because we are illiterate. Our children ask the question, we are unable to reply live in passive mood."

From the above aforementioned statement, student are well participate in short term profit than the long term or life long career formation task due to their backwardness. They are doing that for compulsion for someone whether their interest also. They are doing that for compulsion for someone weather their interest also. Through this they are derived of education. Students do not get the solution on the spot so their interest and need also on that field decreasing day by day, no doubt.

Thus the researcher conclude by all above evidence that, main causes of low achievement in mathematics which are irregularity, lack of active participation in classroom, lack of interaction between teachers and students. And, irresponsive nature of teacher inside the classroom for example some students are busy in chatting while teacher is teaching but teacher's ignorance on it. Also, there are reasons like, poor economic condition of parents, lack of parent's education and awareness. Similarly, other reasons are lack of reinforcement in classroom by the teacher, unplanned

learning environment and not continuous evaluation procedure, lack of teacher training and lack of instructional facilities.

The analysis reveal that majority of the students get 'E' grade due to their poor family background, educational qualification of the parents, lack of sufficient teaching and learning materials. Likewise, most of the students were failed and get 'E' and 'D' grade in SEE. This is because the school not provides good environment and exposure to those students who had low achievement in mathematics. However, at practice level the teacher should start the lesson in time, content should be review, they should prepare lesson plan. Moreover, teachers should motivate those students who had low achievement in mathematics.

This study was mainly concerned with causes of low achievement in mathematics. On the basis of the students failed in mathematics due to economic background, careless of parents, ignorance of head teacher, aware lessens of mathematics teacher. There is not sufficient teaching and learning materials in the school. Similarly, the school should not conduct extra classes for those students who were very poor in mathematics. It can be said the teachers, parents and school administration should consider those students who are poor and less motivated towards teaching and learning.

CHAPTER V

FINDING CONCLUSIONS AND IMPLICATIONS

The main purpose this particular research is to through light on the problems of low achievement of students at mathematics, find the cause of problems, analysing them and to show the finding of study. Thus, this chapter deals with the findings and conclusion of this study, this chapter states summary of the research, major findings of the research and conclusion and recommendation for the further study.

Findings

On the basis of presentation, analysis and interpretation of the data, major findings of the study have been summarized as below:

- It was found that lack of sufficient teaching learning materials students as well as mathematics teacher did not get opportunities to practise in mathematics.
- It was also found that environment of school was not good. The relationship between teacher and student was not good. Due to lack of interaction achievement of mathematics was very low.
- Teacher's didn't motivate and repeat previous lesson in the classroom.
- Mathematics was difficult subject. Most of the parents were illiterate so that they didn't provided further guidance and feedback in mathematics.
- Student did not pay attention while the teacher taught in the classroom. They did not complete their classwork as well as homework properly.
- It was also found that parents could not pay tuition, coaching fee, could not buy reference materials because they were very poor.
- Students were very busy in the household work.

Conclusion

Classroom practises and the curriculum must be closely linked while teaching inside the classroom, practise solving system and interaction is the main things while studying mathematics. Achievement of students is always affected by different variable such as school's learning environment, physical infrastructure, learning materials, psycho-social activities knowing children's interest, leisure time at home

for homework and for entertainment to the student at home, reinforcement and feedback class at school, equal evaluate and monitoring of each child in the class. Student's activeness inside the classroom with the help of teaching materials are

The main things that directly affects children's good result. Most importantly the changed and new teaching style of teachers in the age of science and technology are mostly needed to build a competitive world.

Teacher's beliefs about the nature and purposes of mathematics and how students learn have powerful effects on the quality learning and for good outcomes. Although the school seems to have sufficient physical infrastructure, teacher service commission appointed educated teacher, teachers found unable to maintaining teachers personality adopting new technique and new way of preparing teaching materials to make easy for children to understand any concept. The teacher seems careless on doing classroom immediate practise with students. No interaction of teachers and parents about children's progress and condition at schools also created passiveness on students.

Implications

From the above finding and conclusion, the researcher would like to do the recommendation for the improvement of teaching learning process at first than after good result and satisfied student's achievements at match to claim quality education. In the context of many public schools of Nepal, many of the students are negated and not properly treated even to get the quality education and even they are failed at mathematics and facing the great challenge throughout their career.

Although the schools seem having qualified, trained and experienced teachers are working at public, continuous assessment system, implementation of operational mechanism and its continuous analysis not being implemented. So the government also has main role to improve the condition to providing different training to the teacher and adequate number of teachers and proper budget to change the condition in education.

This research mostly has been done on the basis of the case study of selected sample schools so the other schools can be represented on this but the result may not

be generalized in all situations. It is due to lack of time and research, researcher had to reply only on some schools to do the research. The result and conclusion of this study generated some other question which need to be verified. Some of them are presented as follows-

Recommendation for Educational Implication

- The school should manage the instructional materials to improve the quality of education.
- student Schools should manage extra classes for low achievement.
- Student cantered method and other new technique should be focused.
- Teacher should apply the recent methods of mathematics teaching.
- Teachers should provide the mathematical concepts according to their pre-knowledge.
- This is the age of science and technology; different innovative technologies are invented to teach and coach the students. Thus, teacher must be updated with modern innovative technology.

Recommendation for Further Study

- A similar study can be done for other classes and other subject.
- What sort of policies and mechanism should be adopted to promote mathematics achievement?
- One can should study about why students are less interested in mathematics.
- This study is limited, so it can be done district wise or nation wise.

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Appendix-C

Guidelines for Interview with Head Teacher

Name:

Age:

Sex:

Qualification:

Experience of Head Teacher:

This interview with head teacher was taken on the basis of following guidelines:

- Physical facility of school: building, playground, classroom etc.
- Teacher's qualification and experience
- Classroom management
- Instructional material, library
- Use of instructional techniques
- Relation between teachers and student
- Evaluation system
- Views on mathematics achievement
- Views on student's achievement in mathematics
- Role of school management committee for the betterment of school
- School's relation with guardian
- Policy for low achiever student

Appendix-E

Classroom Observation From

Name of the Teacher:.....

Length lesson:.....

Topic :.....

S.N		Good	Satisfactory	Poor
	Teacher			
1	Appearance: I. Cleanliness II. Self-confident III. pleasing			
2	Start on time			
3	Content review			
4	Prepared lesson plan			
5	Motivation			
6	Instructional Material			
7	Concept of content			
8	Summary of lesson			
9	Class work			
10	Encouragement for learner			
11	Evaluation I. Written II. Oral			
12	Interaction with student			
13	Confident over content			
14	Homework			
15	End on time			
	Student/Learner			
1	Concentration on lesson			
2	Curiosity for learning			

3	Participation on discussion			
4	Communication with teacher			
5	Completion of homework			
6	Confident			
7	Ask question			
8	Answer relevantly			
9	Follow direction			
	Classroom Management			
1	Light and ventilation			
2	Black /white board placement			
3	Seat arrangement			

Appendix-F**Physical Facilities**

S.N	Description	Quantity	Remarks
1	Play Ground	1.5 Bigha	
2	Building	3	
3	Classroom	27	
4	Toilet	7	Boys, Girls and staff
5	Library	1	
6	Desk & Benches	125/125	
7	Chair Table	125	
8	Drinking Water Tap	3	