## Chapter I

## INTRODUCTION

## Background of the Study

The word 'mathematics' wasderived from ancient Greek words 'mathema' that stands for 'to learn' therefore the mathematics refers way to process learning and the expression of human idea with scientific reasoning. According to the dictionary of mathematics 'mathematics as the logical study of shape, arrangement, quantity and many related concepts' (James and James, 2008).Generally the terms 'mathematics' is defined as numbers of way which means the calculation, measurement and dealing of the problem of space, the way to thinking, analyzing and synthesizing of data

Mathematics has becomean essential part of human life these daysbecause ithelps to solve practical problems of daily life of both literate and illiterate people. In other words mathematical knowledge and idea help in solving the problem concern daily activities of their life. Mathematics is a discipline in the sense that, it has its own mathematical structure, rules, symbol, formulas, theories and proof ideas. Similarly, empirical observation and experiences help to solve the mathematical problems. Now days it is accepted that mathematics as the science of all science and part of all art.

Mathematics is the foundation of development. It has been accepted as an important component of formal education from ancient period to the present day. It is clear that mathematics is an essential subject for teaching and learning. Therefore, it is very much important to solve their practical problems including why mathematics has been developed as one of the complex subject? Why the achievement of mathematics is low? Why does this occur the failure of student rate get high? These are the
challenging issues in developing countries including Nepal. There are so many students who get failed and if some are passed, they secure very low marks in mathematics. So, it is our duty to find out what and why it actually happens.

Nepal is adeveloping and landlocked country so the mathematics teaching and learning situation seems to be very poor in rural community schoolsratherthan urban one, because of the lack of the well infrastructure they are bound to learn only the subject as their teaching course. Its refers that, itcannot get sufficientexposure to learn mathematics in a practical manner, because of this reason most of the students feel that mathematics is very difficult subject to show their performance. Similarly, the failure rate of the students in mathematics is higher even in SLC examination in comparison to other subjects. Relating to these facts this study was only concern to the answer of question, why the mass of students are failure in mathematics in SLC examination.

Most of the educated parents want their children to study science and mathematics. So, they create an appropriate environment to study this subject, they invest more money to educational sector for their bright future of their children;they join the tuition class regularly from primary to secondary level. But, the condition of school level education is not satisfactory. Itshows that parents and government input is changing in the meaningless ways. Therefore, it's need to be changed in policy.

In the context ofNepal, Department of Education (DOE) plays vital role to manage and administering of school education program. District Education Office (DEO) is the lower level government. It manages the school level education structurally. More specifically, Ministry of Education (MOE) is the central agency for education policy formation and implementation in Nepal. "The SLC has become almost the first
indicator of education. Obviously a huge far and anxiety is associated with the SLC, because of our social schooling, we have a propensity to judge a student on the basis of the grade he/she secure in examination but not on the basis of his/her competency... student who have set goals to do well in the SLC work hard year long. But, examination time brings about the feelings of fear, tension, anxiety and uncertainty. Students often lose their appetite and suffer from other problems like insomnia, headache, fatigue and fever. Anxiety actually makes the filter that is inside our brain, in between the receiving and production areas more active in blocking the channel between star shaped calls and pyramid shape cells as a result, the students memory power may become even weaker''Rai(2013).

SLC examination was established in 1999 BS in Nepal. It is the $80^{\text {th }}$ edition program. The record of the SLC result of 2066-2070BS is illustrated in the following table.

Table 1.1

National Achievement of Regular Students in the Year 2066 to 2070 B.S

| Years (in B.S) | Appeared | Passed | Passed Percentage |
| :---: | :---: | :---: | :---: |
| 2066 | 385221 | 250220 | 64.95 |
| 2067 | 397833 | 222568 | 55.95 |
| 2068 | 419121 | 199714 | 47.65 |
| 2069 | 404009 | 169161 | 41.87 |
| 2070 | 394933 | 173436 | 43.92 |

Source: Statistics of SLC result 2066-2070, OCE SanothimiBhaktapur.

In the above table, it is shown that the regular students of the SLC result were recorded in past five years 2066 to 2070 B.S. In 2066 B.S the national achievement of
regular student is 64.95 percentages. After that in 2067 to 2069B.S the national achievement of the regular students SLC result was decreased continuously. Similarly, in 2070B.S. the students result was improved rather than 2069 B.S. In 2070 B.S the students result was increasing by 2.05 percentages, but it is not a satisfactory result.

## Table 1.2

## Average Marks of Regular Students in Compulsory Mathematics in the Year

## 2066 to 2070 B.S

| Years (in B.S) | Appeared | Pass Percentage | Average Marks in <br> Math |
| :---: | :---: | :---: | :---: |
| 2066 | 385221 | 64.95 | 46.41 |
| 2067 | 397833 | 55.95 | 42.82 |
| 2068 | 419121 | 47.65 | 38.16 |
| 2069 | 404009 | 41.87 | 37.89 |
| 2070 | 394933 | 43.92 | 36.40 |

Source: Statistics of SLC result 2066-2070, OCE SanothimiBhaktapur.

The above table shows that the average marks of compulsory mathematics were decreasing. In 2066B.S the average marks in compulsory mathematics is 46.41 percentages. Similarly, the average marks of compulsory mathematics in 2067 to 2070 B.S were $42.82,38.16,37.89$ and 36.40 percentages, continuously.The average marks of compulsory mathematics were not stable; sometimes it was increasing and sometimes decreasing. It means that the average achievement of compulsory mathematics was not satisfactory.

Table 1.3

## Regional Average Marks of Regular Students in Compulsory Mathematics of the Year 2066 to 2070B.S

| Subject and <br> Full Marks | Years (inB.S) | National <br> Average <br> Marks in <br> Math | Regional Average Marks |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | EDR | CDR | WDR | MWDR | FWDR |
| Compulsory <br> Mathematic <br> 100 Marks) | 2066 | 46.41 | 43.78 | 53.55 | 46.92 | 39.48 | 37.46 |
|  | 2067 | 42.82 | 38.91 | 54.32 | 40.79 | 33.60 | 28.93 |
|  | 2068 | 38.16 | 32.04 | 46.96 | 39.24 | 28.81 | 32.71 |
|  | 2069 | 37.88 | 31.12 | 46.35 | 41.71 | 41.71 | 30.66 |
|  | 2070 | 36.40 | 30.45 | 43.46 | 39.96 | 30.73 | 26.06 |

Source: Statistics of SLC result 2066-2070, OCE SanothimiBhaktapur.

In the above table, it describes about the regional average marks of regular student in compulsory mathematic in the year of 2066 to 2070B.S. Comparatively, the regional average mark in compulsory mathematics is found to be higher in CDR then in other developmentregions. The achievement of regular student's average marks was not stable as well as satisfactory in mathematic.

In the SLC result 2070B.S shows that in the total participants of regular students in SLC Examination, 172211 are failure in mathematics and 68187 students got supplementary in compulsory mathematics. Similarly, in the context of Salyan district there are 3909 students were appeared in the SLC examination 2069B.S but, 289 students were passed regularly. And also in 2070B.S 3696 students were appeared in SLCexamination in Salyan district. Among them 800 students were passed regularly. This shows that, the SLC result and achievement of students in mathematics is not satisfactory in terms of governmental, non-governmental organizations and parents invest.

## Statement of the Problems

Generally, in the context of Nepal SLC examination is compared with the Iron Gate. It is even taken as one of the best way to measure the students learning and determine the selection of students for their higher education, profession and increase of the educational standard. Especially in the history of Nepal, SLC examination was established first time in $16^{\text {th }}$ Karthik 1990B.S.It was the establishmentof school leaving certificate (SLC) board. Since, then the system has been continuing even these days. For the betterment of this system the government of Nepal has been organized different programs. However, the result of the SLC examination is not satisfactory. The large number of students appeared in SLC examination, But a few of them get succeed in the regular basis.The reason behind this could be different depending upon context. To be specific, most of the students get failed in mathematics that belongs to rural community school. According to Sharma, at.al.(2071 B.S), "Student has to pass all subjects with the minimum scores in each individual subject to pass the SLC exam. Those who cannot score the minimum marks in one of the subjects fail in SLC examination. Failure in SLC exam has serious implications upon the life of the children and in same case this has led to the death. Every year when the SLC result is published, case of suicide is reported in the media". This means that SLC result got serious psychological problem of students and parents.

To minimize the gap between student success and failure different programmers have been launched by different governmental (SLC board of Nepal and Ministry of Education) and non-governmental organizations focus on the teacher'sProfessional development and educating training. Parents force their children to join in tuition and coaching classes. Also, they spend more time in mathematics including their homework at their home, also the students' low achievement in mathematics and the
dropout rate is increasingand this is one of the next common problem of low achievement and failure of students in mathematics. More specifically, research problems are listed as following:

- What are the causes of students' failure in compulsory mathematics of rural community school?
- Which areas do the students feel difficulties in compulsory mathematics?


## Objectives of the Study

Following were the objectives of the study:

- To find out the causes of students failure in compulsory mathematics in SLC examination.
- To find out the students difficulties in different areas of compulsory mathematics.


## Significance of the Study

Mathematics is taught as compulsory subject at all the school level education. It is also taken as optional subject in secondary level education. It bitter to say that, the previous result of SLC examination is not satisfactory. Most of the student achievement in mathematics is very low and failure rate is higher, there are so many infusingfactors behind student failure rate incensement such as home and school environment, student's attitude towards the subject, teaching learning process, teacher performance in qualification, time management, examination situation, national policy and so on.

Therefore, the study weresignificance to identify the most influencing factor that affects the students' failure in mathematics in SLC examination on rural community school of Salyandistrict. It is also, important for the educational point of view that helps to improve and reform the strategic for mathematics teaching and learning at
secondary level.This study certainly helps to improve the result in mathematics brick of SLC examination. Significance of this studywas listed as follows:

- This studyhelps to improve the students' performance in mathematics in rural community school of secondary level.
- This studyhelps the parents to pay attention on the cause of failure in mathematics and introduce about which infusing factor that are responsible to failure in mathematics.
- The study is helpful for the administrator, policy maker, educator, teachers and such stake holder to improve teaching and learning strategies.
- This study is helpful for the teachers to improve their technique of teaching method and learning activities

This study is useful to give some basic guidelines to complete the new research in the field of teaching and learning activities in mathematics and it is also able to be open door for further research in this field.

## Delimitation of the Study

- This study was limited only in the Salyan district.
- This study was limited only those students who are failure in mathematics.
- This study generalized only the Salyan district based on community school.
- This study included only the students of SLC and causes related to students, parents, teachers and curricular factor.
- The study was based on qualitative as well as quantitativedescription.


## Definition of Operational Key Terms

SLC Failure students: it refers to the students obtain bellow the $32 \%$ marks in each subject in SLC examination.

Rural community school: The school which is far from the urban area and also established and sponsored by government.

Students related factors: It refers as age, gender, mother tongue, prior knowledge about mathematics, curiosity to learn mathematics and time spent to studying mathematics at home and participation in classroom activity.

Parents related factors: Itrefers as economic status, occupation, educational background of parents and learning opportunity provided by parents at home, whose son and daughter are failure in SLC examination.

Teacher related factor: It refers as personality and qualification, teaching and evaluation skill and teaching behavior of mathematics teacher.

Curricular factors:It refers as course contain of compulsory mathematics of grade X, designed by SLC board.

Difficulties: There are different areas of mathematics, each of every area obtains fixed marks in SLC examination, such as Arithmetic obtain 16 marks, Geometry obtain 24 marks, Algebra obtain 24 marks, Mensuration obtain 14 marks and Sets, Probability, Trigonometry and Statistic obtain 22 marks. If students get low achievement in any area of mathematics or, if they are unable to solve the problems concern each area of mathematics then they got failure in mathematics.

## Chapter II

## REVIEW OF THE RELATED LITERATURES

Review of literature is an essential part of study. The review of related literature deals with the knowledge about study, what has been established and what has not been attempted yet. It provides systematic direction on the related research or study to make the concern problems more realistic, researchable and meaningful. There are various literatures on the field of teaching and learning mathematics, numbers of research report, book, booklets and article have been found that are concern with curriculum, teaching materials, strategic, method and so on. In this chapter attempts to review research studies and literature related to domain of cause of [students failure in mathematics in SLC examination on rural community school. In fact related literature has been reviewed as follows:

## Empirical Literature

Subedi(2005), did study on the topic " factors affecting on the mathematics in SLC examination" to fulfillment the research objective he had measured the effective of school and out of school environmental factors in mathematics in SLC examination for this he had determined the correlation between affecting factors and mathematics achievement. Finally, he concludes that:
I. School environmental factors like as school location, numbers of students in class room, environment of classroom, regularity of teachers etc are the affecting factors for failure in mathematics. He concluded that a school environmental factor is essential for improving and increasing of mathematics achievement.
II. Effectiveness of classroom teaching environment such as planning of students, using of lesson plan and instructional materials, participation to discussion and teachers activities are gives strongly positive for increasing mathematics achievement so it should be improved.
III. Time related factors that are students spend a time on out of school activities such as homework, discussion with pairs group, and practicing gives strongly positive effect in mathematics achievement. Finally, he conclude that school environmental factors, effectiveness of classroom teaching, environmental factors and time related variable are strongly affected to learning of mathematics. Ifstake holder is encouraged to study about the above task the achievements in mathematics will be increased.

Bhatta (2011), Carried out research on 'causes of failure in mathematics in SLC examination in an ineffective school of Sindhuphalchoke district with objectives, to identify the causes of failure in mathematics in SLC examination from in effective school in Sindhuphalchoke district and find out the effective of causing variable and low performance students ineffective school of Sindhuphalchoke district. Research was descriptive and qualitative in nature. In this research failure students from ineffective school were selected from sample by using random sampling method. Interview, class observation from and school document were the main tools for data collection. The data were analyzed and interpreted on the basis of different theories as intelligence theory of fear, theory of school effective and theory of educational productivity. Finding of this research was teaching and learning process was become a great issue in different level of education. This research was concluded that prior knowledge of students, lack of proper participation in classroom activity, lack of students interest to learn math, students and teacher both have devotion and lack of
labor towards mathematics teaching and learning activity makes increase students failure in mathematic

Sapkota(2011), did study on " Cause of failure in mathematics at school" of a public school in Lalitpur district with the objectives, to find cause of failure in mathematics at secondary level and to identify the strategy taken by the school in improvement of mathematics achievement. This research design was qualitative as well as descriptive in nature. Therespondents of the case study were student corresponding parents, teacher and head teacher. From the case school six low achiever students including three boys and three girls were selected according to different family background and performance in mathematics examination. He collects the primary and secondary data from school documents, observation note and interview guideline were used. The result of this research was classroom practice and the curriculum was closely linked. Achievement of students is always affected by different variables such as school learning environment, facilities at home, classroom environment, school policy, mathematics instruction and assignments at classroom and so on.

Baral (2011), conducted a research in "Cause of failure in mathematics on SLC examination" a case study of school in Bharatpur municipality. The main objectives of this study was to explore the main causes of failure in mathematics in SLC examination and to bring improvement in result by finding the improvement programs that can be carried out in school level. The nature of this study was descriptive as well as qualitative. The population of this study was selected in public school of Chitawan district. The study shows that the mathematics teacher who are unable to address for varied, cognitive level of students in classroom while teaching. Similarly, the extra class managed by school was not sufficient for students because of the large number
of student in single class. Finally, he concludes refreshment training must be given to the teacher time to time for improving the mathematics achievements.

Dangol (2012), carried out the study on "Cause of failure in mathematics". The main objectives of this study were to find out the causes of the higher percentages of student failure in compulsory mathematics in SLC examination and to identify the strategies taken by school administration in improving mathematics achievement. The sample population of study was taken from public school and private school students in Nuwakot district. The researcher shows that the new policy was recently organized, so effectiveness of the programs cannot be more generalized. Similarly, the school has a continuous communication gap with guardians. Finally, he concludes students from public school are higher in number then others because qualified; trend and experience teachers were working at public school.

Tharu (2014), did study on "cause of failure in mathematics in SLC examination" with the objectives, to explore the main cause of student failure in mathematics in SLC examination and to analyze the cause with reference of teachers and students perception. The sample population of this study was taken as 400 students of grade X and 50 mathematics teachers of secondary level from Bardiya district. The study shows that the student and teaches both agreed that the teacher qualification affected to poor academic performance. Finally, he concluded that student's interest and motivation has stimulating learning to study mathematics.

## Theoretical Literature

'Mathematics is the science of number, space, language of science and technology. It is an essential requirement by every field of intellectual endeavored and human development to come out with the challenges of life. It is also, described as the queen
servant of all school curricula' (Fajemidagba, 1986, Akpan, 1987). Mathematics is the subject that is related to other school subject in areas like number, graphs, fraction, indices, variant, algebra, volume and logarithms. In spite of its important, the performance of student in this subject has been a great concern to the society.

Aremu and Sokan (2003), said that the researcher for the causes of poor academic achievement in mathematics is unending. Some of the factors that are affect in mathematics achievements such as , motivational orientation, self-esteem, selfefficiency, emotional problems, study habit, teacher consultation and poor interpersonal relationship among students. Similar manner Bolaji (2005), submitted that on study the students attitude towards mathematics. He found that the teaching method of teacher and his personality greatly accounted for the student's positive attitude towards mathematic.

Ojendra (1989), said that learning environment mismatch promotes poor academic performance. The strategies employed teachers in an attempt to impact knowledge to the learners and referred to as methodology, which is another factor that influences the students' performance. Sometime when a teacher teaches and at the end of the lesson, evaluation is carried out and it is discovered those students are unable to carry out the behavioral objectives, what the teacher need to do examine his teaching method rather than looking at students. Finally, he concludes that before teaching the teacher planning should be included:

- of appropriate teaching material
- Choice of appropriate teaching methods
- Intensive research Choice on the topic to be taught
- Determination of the objective for the lesson generally, per group means a group of equal.

Finally, he concluded that the peer group has influence on the adolescent's pattern of behavior especially on their interest, attitudes, value system, emotional expression and interaction pattern and so on. When the adolescents fell into the bad group there is higher chance to his social behavior would change for bad habit rather than good habit. Therefore, it can influence his academic performance negatively.

The curriculum and evaluation standard for school in mathematics national council of teachers of mathematics (1989), point out the standard on communication that understanding mathematics can be defined as the ability to represent a mathematics idea in multiple way and to make correction among different representation. In order to think about mathematical ideas this need to be representation internally but these mental representation are not observable this had laid cognitive science to considered mental representation. As a field of study, the connection between external representations of mathematical idea can be constructed by learner between different factors of the same ideas or between related mathematical ideas. This connection often based on relationship of similarity or difference connection with the same representation is formed by detecting patterns and regulation.

## Conceptual Framework of the Study

From the above literature review wecan say that causes of students failure and low achievement in mathematics affected by different variables such as class size, instructional materials, physical facilitates, peer-group influence, teacher's qualification, parents' qualification, quality of instruction, students perception, lack of math lab, evaluation system and curriculum factors. For this study the researcher
adopted the theoretical framework according to Salman, M.F. et.al. (2012), cause of failure in senior school certificate mathematics examination, view by teacher and student ondo, Nigeria. Which are considered as below:

## Causes of Failure in Senior School Certificate Mathematics Examination



Source: Journal of Education and Practice Vol.3, No. 8, 2012
Inour context, teacher unable to finish the course content at time. They used to say there is not proper combination between the course content and the allocated time to complete the course. It is also most influencing cause to student failure in mathematics. Now with the help of above conceptual understanding, the researcher developed the tools for analyzing and interpretation of the obtained data. Above empirical and theoretical evidences shows that, possible factors of the research question and the field of causes of student failure in compulsory mathematics.

## Chapter III

## RESEARCH METHODS AND PROCEDURES

Research methodology is well planned and guide line about research design and process that determine how to complete the research systematically. In this chapter researcher gives details information about the design of research, selection of case respondents, data collection instrument, data collection methods and data analysis procedure.

## Design of the Study

The design of this study was descriptive survey research of secondary school with the aim of, find out the cause of student are failure in mathematics in SLC examination on rural community school of Salyan district. The research tries to find out the various types of factors through questionnaire and semi-structure interview, so the research design based on mixed nature i.e. quantitative as well as qualitative.

## Population and Sample of the Study

The population of the study wasall the students who were failure in SLC examination and all the mathematics teachers of secondary school of Salyan district. The sample of the student was one hundred twentystudents, six mathematics teachers, six head teachers and twenty parents were taken in the study from different six secondary school and different areas ofSalyan district.The research selected six schools from three resource centre with stratified random sampling method from each school. The students who were failure in SLC examination was taken for the sample for this study.

## Nature and Source of the Data

Specially, this research was based on primary and secondary data. The researcher was visit to students, mathematics teachers and parents to collect the data. The researcher used both quantitative and qualitative data in this study. This research was specially based on qualitative description.

## Tools of Data Collection

The questionnaire and Semi-structure interview schedule was the major tools for this study. At first, the questionnaire are contains on objective nature about the mathematics contents as arithmetic, algebra, geometry, mensuration, set, statistics, probability and trigonometry of grade X separately on the basis of specific table. Semi- structure interview schedule is another tool of data collection in this research. For this, at first researcher was prepared different type of possible statement of research question which was tested by the experts. Then after the researcher was asked different type of causes among teacher, students, parents andcurricular factor that make student's failure in mathematics. Finally, secondary datawere collected from schools documents, student's records, and office of the controller examination and so on.

## Data Collection Procedure

To collect the data, the researcher visitedsixschools where sample were taken at a school time. First the researcher visited to the Head teacher of the selected school and introduces myself and then mathematics teacher. Aftertaking permission to visit the studentswho were failure in SLC examinationand informing about the study equally explain to the subject about their roles too. Then after the researcher gave questionnaire to each student explain to them how to response. At last, the researcher
collected all answer from the questionnaires. Similar manner, researcher visited the head teacher of the school, mathematics teacher, students, and failure student's parents to talk interview about the cause of student's failure in mathematics in SLC examination of that school. The researcher requested to the mathematics teacher to talk the interview and then the interview took similarly, as student. After collecting the data the researcher developed different table and conclusion derived after interpretation and analysis of data.

## Data Analysis and interpretation

At first analyzing the information from questionnaire and categorize achievement in geometry, algebra, arithmetic, mensuration, set, statistic, probability and trigonometry separately. After that simple percentage used to analyze and interpreted the data. Finally, the researcher analyzed the cause of student failure in mathematics collecting by the semi-structure interview. Researcher pointed out the respondent view in Nepali during interview for easier and then it is translated in toEnglish. The view exploring by the respondent were interpreting in the verbal description i.e. qualitative description. Finally, to analyzing the data, the researcher classified and interrelatedthe data according to the homogeneity and heterogeneity of data's nature and then compared and analyzed the view of students, teachers, Head teacher and parents for which, data are collected from interview and questionnaire through triangulation way of analysis.

## ChapterIV

## DATA ANALYSIS AND INTERPRATION

This is the survey research related to causes of student failure in compulsory mathematics in SLC examination on community school of Salyan district. This chapter deals with the analysis and interpretation of the collected data or information. Data are obtained from the parents, hade teacher math teacher and 120 students of six different schools. Questionnaire and semi-structure interview schedule are the main tools for collecting the data or information. This research design was qualitative descriptive in nature so, the collected data were classified, analyzed and interpreted according to the objective of the study.

## Short Profile of Sample Selected Schools

In this research there are six different community schools were selected as sample from different areas of Salyan district. Among them Shree Tribhuvan Jana Secondary School is one sample selected school. It was established in 2011 B.S. This school is situated in Dadagaun VDC Ward No. 5 Malneta, Salyan and located in south western part from headquarter of Salyan district. There are 19 teaching and non-teaching staffs are working in this school. In 2070 B.S. there are 86 students were appeared in SLC examination and among them 24 students only got success in SLC examination. ShreeBalshakha Secondary School Madamkanda was established in 2018 B.S. and it is affiliated secondary school in 2066 B.S. This school is situated in Kajari VDC Ward No. 5 Madamkanda, Salyan and located in South western part from headquarter of Salyan district. There are 15 teaching and non-teaching staffs are working in this school. In 2070 B.S. there are 45 students were appeared in SLC examination and among them 22 students only got success in SLC examination.Shree Shivajan

Secondary SchoolShitalpati was established in 2016 B.S. this school is situated in Khalanga VDC Ward No. 2 Shitalpati, Salyan and located in eastern part from headquarter of Salyan district. There are 26 teaching and non-teaching staffs are working in this school. In 2070 B.S. there are 100 students were appeared in SLC examination among them 33 students were only success in SLC examination.

Shree Jana Joti Secondary School Farulachaur was established in 2021 B.S. this school is situated in Bhalchaur VDC Ward No. 3 Farulachaur, Salyan and located in South western part from the headquarter of Salyan district. It is the neighborhood school of Rukum district. There are half then over students are studying from Rukum district. All together there are 22 teaching and non teaching staffs are working in this school. In 2070 B.S. there are 153 students were appeared in SLC examination and among them 86 students with one district first were success in SLC examinatiShree Kalika Secondary School Kajari was established 2021 B.S. and it is affiliated Secondary School in 2064 B.S. this school is situated in Kajari VDC Ward No. 3 Salyan and located in South western part from the headquarter of Salyan district.All together there are 16 teaching and non-teaching staffs are working in this school. In 2070 B.S. there are 36 students were appeared in SLC examination and among them there are 9 students were only success in SLC examination.

Shree MahendraAdarsha Secondary School Banjhakada was established in 2024 B.S. and this school has providing special education for exceptional children separately. This school is situated in Banjhakada VDC Ward No. 5 Banjhakada, Salyan and located in south western part from headquarter of Salyan district. All together there are 17 teaching and non-teaching staffs are working in this school. In 2070 B.S. there are 58 students were appeared in SLC examination and among them there are 13 students only success in SLC examination.

## Analysis Based on Questionnaire

This research was conducted questionnaire for 120 SLC failure students from different six community school of Salyan district. In the questionnaire, there are 18 items open and closed intended questions, causes related to students failure in mathematics were asked to students which are analyzed as below:
$1^{\text {st }}$ statement tried to measures the student's prior-knowledge about mathematics.There are $72.5 \%$ students agreed that they are failure in mathematics from previous classes and $27.5 \%$ students agreed that they are not failure from previous classes. This shows that students who are got failure from previous grades are got more failure in mathematics in SLC examination.It's concluding that lack of prior-knowledge about mathematics is the most influence factors for student's failure in mathematics. $2^{\text {nd }}$ statementried to measure about the student's pair participation in class room learning activity. There are $7.5 \%$ students agreed that they are got active participation, $25.83 \%$ students agreed that they are unknown about this activity and $66.67 \%$ students agreed that they have not enough time to do such activity in classroom. As a result it shows that lack of interaction between pair group about mathematics problems also the influencing factors for student's failure in mathematics. $3^{\text {rd }}$ statement tried to measurestudent'sinterest and curiosity about learning mathematics. Findingshows that there are $5.83 \%$ students agreed that they are interest to learn math, $44.17 \%$ students agreed that they feel mathematics is boring subject and $50 \%$ students agreed that they not understanding mathematics appropriately.It's concludes that most of the students have not curiosity to learn mathematics. So, it is also the one influencing factors for students failure in mathematics. $4^{\text {th }}$ statement tried to measure the facility availability to learn mathematics in school. There are 5\% students agreed that they got properly used
library to learn math, $38.33 \%$ students agreed that they got facility to study library but, they do not use it and $56.67 \%$ students agreed that they have not enough time to use such facilities. As a result it shows that they are not used their available facilities properly. $5^{\text {th }}$ statement tried to measure the relation between teacher parents and progress about students. There are $4.17 \%$ students agreed that parents always asked about their progress with teacher, $65.83 \%$ students agreed that sometimes and $30 \%$ students agreed that parents do not asked their progress with teacher. It's concludes that parents are not caring properly about students study and what students are doing. So, it is also the responsible factors to make students failure in mathematics. $6^{\text {th }}$ and $7^{\text {th }}$ statement tried to measure the parents support on solving the mathematics problems and providing necessity materials to learn mathematics for their children. There are 2.5 \% students agreed that they got proper support from parents, $60 \%$ students agreed that they can'tgotproper support from parents due to the parents illiteracy and 37.5\% students agreed that they can't got proper support from parents due to the parents busyness in their work. In other hand there are $32.5 \%$ students agreed that parents sent tuition and extra classes to study math and $67.5 \%$ students agreed that parents can't manage necessary materials and can't support study math, due to their poor economic status.It's shows that students cant got proper learning support from their parents due to the their illiteracy and poor economic status. $8^{\text {th }}$ statement tried to measure time manages by students to learn math. there are $10 \%$ students agreedthey are studying on routine based, $65 \%$ students agreed that they are studying on exam based and $25 \%$ students agreed they studying irregularly.It's shows that most of the students studying math on the basis of exam by preparing selected questions. When prepared questions are not asked on examination then they can't solve such other problems of mathematics. Finally, they got failure in mathematic. $9^{\text {th }}$ statement tried to measure
about mathematics course of study taught by teacher on once a academic year. There are $75 \%$ students agreed that mathematics course do not complete at time and $25 \%$ students agreed that its need extra classes to complete. This shows that mathematics course was not completed every academic year at a time. So, it is also the most influencing factors thatmakestudents failure in mathematics. $10^{\text {th }}$ statement tried to measure the activity that homework give and check by teacher. There are $10 \%$ students agreed that teacher do such activity once a week, $85.83 \%$ students agreed that sometimes and $4.17 \%$ students agreed that teacher never do such activity. This shows its need regularly to do homework give and check by teacher because such activity makes students more practice and understand mathematics. $11^{\text {th }}$ statement tried to measure the individual teaching activity provide by teacher. There are $25 \%$ students agreed that teacher gives equal time for each students while teaching, $75 \%$ students agreed that teacher cant gives equal times to each students due to the large number of students in single class.It's shows that teacher unable to provide equal time and opportunity to learn mathematics in classroom teaching. So, it is also the most responsible factors that make students failure in mathematics. $12^{\text {th }}$ statement tried to measure the evaluation skills of teacher. There are $15 \%$ student agreed that teacher take monthly test about mathematics and $85 \%$ students agreed that teacher take terminally examination. This shows that its need continuous assessment system to improve the students achievement in mathematics. $13^{\text {th }}$ statements tried to measure the teacher behavior about teaching mathematics in classroom. There are 35\% students agreed that teacher himself solves the mathematics problems, $42.5 \%$ students agreed that teacher gives chance to students solve the mathematics problems and $22.5 \%$ students agreed that teacher influence to students solving the problems. This shows that it is better to give the chance to student's themselves to solvethe mathematics
problems. $14^{\text {th }}$ statement tried to measure the students used guideline materials to prepared examination. There are 5\% students agreed that they used text and note book, $60 \%$ students agreed that they used practice book and $35 \%$ students agreed that they used model questions to preparing examination. It is better that if students use text book with practice book to preparing examination. $15^{\text {th }}$ statement tried to measure the teacher attendance in classroom teaching. There are 5\% students agreed that teacher come regularly in classroom, $60.83 \%$ students agreed that teacher are irregular in classroom and $34.17 \%$ students agreed that satisfactory. It's shows that most of the time teachers are irregular in classroom. So, it is also the most influencing factors that make students failure in mathematics. $16^{\text {th }}$ statementtried to measure about teacher teaching skill and knowledge about subject matter. There are $12.5 \%$ students agreed that teacher have appropriate knowledge about subject matter, $35 \%$ students agreed that teacher have not appropriate knowledge with unit wise and $52.5 \%$ students agreed that teacher can't give clear concept about subject matter. As a result it shows that teacher related factors as lack of appropriate knowledge about mathematics and ineffective teaching technique also the influencing factors for student's failure in mathematics. $17^{\text {th }}$ statement tried to measure the distance between student's home and school and its impact their learning. There are $61.67 \%$ students agreed that they are far from the school and $38.33 \%$ students agreed that they are near from school. As a result this shows that, it isalsothe most responsible factor for student's failure in mathematics. $18^{\text {th }}$ statement tried to identify the student's difficulties in different areas of mathematics. There are $42.5 \%$ students agreed that they are poor in geometry, $25 \%$ students agreed that they are poor in algebra, $16.67 \%$ students agreed that they arepoor in trigonometry and $15.83 \%$ students agreed that they are poor in arithmetic.

This shows that most of the students are poor in geometry. It concluded that curricular factors also the most influencing factors for students' failure in mathematics.

## Student Related factor as Causes of Failure in Mathematics

According to the physical point of view we already know that, all the individuals are different in mental, physical, psychological and behavioral in nature. Mathematics as discipline, which has wider areas about the mathematics knowledge, so it is challenging issue for selecting the teacher, planner, subject export and curricular export to selecting appropriate content to teaching and learning strategies for all age, ability, interest and level of students. Here students related factors means the cause which is directly concerned with student him/her self such as, prior-knowledge about mathematics, curiosity to learn mathematics, time spent for learning mathematics and participation in classroom etc. Which are analyzing as following:

## Prior-knowledge About Mathematics

Generally, prior- knowledge means knowledge of student concern to the previous content of mathematics. Prior-knowledge provides scaffolding on which to build new ideas for understanding mathematics. It is important and potential determinate to well performance in mathematicsso, the teacher must provides to students properly basic knowledge of mathematics from beginning classes. In order to find out some possible reason for the cause of student failure in mathematics by using the interview tools and collecting the information from the respondent as blow:
'I was very poor in mathematics from earlier grades. I can't understand mathematics so, I always try to rote the all mathematics problems but, it is impossible to rote each and every problems of mathematics. So I always fail in mathematics' .

- (Failure Boy Student)
'M athematics is too difficult subject for me because I am always unknown for using mathematics sign, symbols and formulae where and how to use'.
- (Failure Girl Student)
'Large numbers of students from different lower secondary school are very poor in mathematics because they don't know basic rule, method and properties of mathematics'. - (Math Teacher)
'According to the decision of school management committee and government policy, we oblige to grade up the student who are failed in at least two subjects. Among them most of the student are get failure in mathematics'.
- (Head Teacher)

There are various learning theories which are taught between prior and posterior knowledge and also how does knowledge change and grow? According to (Edwards, 1967), was tried to identify distinguished between prior and posterior knowledge. "Prior schemata consist of basis structure that unable to detect regularities in the environment, space and time for a prior status, most other knowledge comes from synthetic combination of schemata with experience. When the conceptual change struck with this framework of prior structures combining synthetically with new experience through the notation schemata and experiences come together". This means that prior knowledge or experience is strongly related to posterior knowledge. This above four views of students and teacher indicates that there is poor interrelation between prior and posterior knowledge about mathematics. This evidence arose that student have problems to learning mathematics because of lack of appropriate understanding and previous concept about mathematics.

## Curiosity to Learn Math

Here, curiosity means the student's internal motivation and interest about studying mathematics. Curiosity always depends upon an individual. How much do student achieve or learn?And how can he/she solve the mathematics problems? That depend on his/her curiosity to learn different areas of mathematics. If the students are interest to studying mathematics they spend their time for studying mathematics then ultimately they earn high score in this subject. Reciprocally, those students who are not interested in mathematics they pay less time to learn mathematics then obviously they get low achievements as well as failure in mathematics. The researcher had taken interview to respondent (SLC failure student) about how much do they like to read and practice mathematics. The sample response view was as below:
'Isometimes read and practice mathematics. There are various mathematics problems different from one another so, I am always confused each and every problems of mathematics. I feel mathematics is boarding subject from farmer grades'.

- (Failure Girl Student)
'We have to use many formulas while solving the mathematics problems but, we don't know how we can use it in our practical life. Problem solving method concern mathematics and problem solving method concern our daily life are not interrelated to each other so, its need necessary to rote the mathematics problems only for passing the grades'. - (Failure Boy Student)
'I am not interested in mathematics from earlier class because of poor mathematics background. Our Teacher does not serious to provide clear concept on each and every topic of mathematics. So, I always fail in mathematics'.
'I never tried depth study of mathematics because it is not compulsory
for higher level education so, I just try to pass the examination by practicing selected possible question of mathematics'. - (Failure Boy student)

From the above sample view the researcher conclude that most of the students have not curiosity and interest to learn mathematics. They feel mathematics subject is barrier for passing the grades and it is only for talent students.

## Time Spend for Learning Mathematics

There are eight subjects in secondary level; out of them generally mathematics is important as well as difficult subject rather than other subject so, it is obviously need more time to learn and practice mathematics. Self practice is main source of learning mathematics but, lack of self practice and participation, lack of continuity for studying, less interaction with friends and teacher etc are the behavioral factors that's makes mathematics is difficult subject. Time spent for practicing mathematics is important variable for the success and failure of student so; it is important aspect for studying. The sample responses view as below:
'I don't like to discuss about mathematics problems in classroom because I feel nervous while class is started. Also I don't have enough time to practice mathematics at home. I have to do various work in my home such as carrying water, cutting grass etc'.

- (Failure Girl student)
'Teacher always gives homework but, I can't do mathematics homework my own self because I am poor in mathematics from previous grades so, I am not interested to spent more time for learning mathematics' .- (Failure Boy Student)
'They did not practice mathematics at home and always engaged in playing. While they are staying at home they have to help us in household work. They study only the school time'. - (Parents view)
'We always provide extra class for all the students before the final examination but most of the students are irregular not only in classroom also absent in extra class. They never complete their mathematics homework at time and did not pay attention in the class while teacher was teaching'. - (Math Teacher)

From above information it shows that students were from village and they have no charming of practicing mathematics and active participation to learning mathematics. Most of the student spent their time on household work and playing with their friends.

## Participation in Classroom Activities

Here, participation means the engagement of the student and teacher in teaching and learning activities of mathematics in classroom. If the students participate regularly in classroom then they learn sequentially about the basic concepts of mathematics.

Reverse of this, if the students are irregular in classroom then they can't understand about the basic concepts of mathematics, in fact that they feel mathematics is difficult subject. Finally, they get failure in mathematics. Student's participation in classroom is the important variable for the success and failure of student in mathematics so; it is important aspect for study. The sample response views were as blow:
'My school is very far from home. I have to do many household works so, lack of enough time I can't complete my homework at a time. I feel shy to attend without homework in classroom so, I sometimes bunk mathematics period'.

- (Failure Girl Student)
'We like to study in group in classroom but, any one friend among us become absent then we whole group become absent'. - (Failure Boy Student) ' $M$ ost of the weak students are irregular in the class room because of their household problems. If the students should be regular in the class, I think we better improve poor performance in mathematics'. - (Math Teacher)

Analyzing about the above information, it shows that student does not give enough time to practice mathematics at home and classroom. Most of the weak students are irregular in classroom participation. Their irregularities make more difficult to learn mathematics as well as pass the examination.

## Parents Related Factors as Causes of Students Failure in Mathematics

A person is neither good nor bad by his/her birth. The environment that makes his/her what he/she is? The character of a person is formed by what he/she is in his/her family. Home is the first school and parents are the first teachersof every child because of child spend much of time with their parents and home rather than formal school. So, parent's proper guiding information is an essential factor that helps to better learning of student. Itis the responsibility of parents to providing the essential facility and learning environment for their children to studying at home and school.

Positive home environment, parent's behavior and learning activities that provided by parents are strongly related to students learning."Parents can contribute towards the continued progress in studying of their children is to provide them with secure, happy at home, make them feel that they are loved and well take of the same time. They must take available almost facilities for free reading room from well graded children's books and magazines. The time for study, encouragement to study and materials for study and the necessary condition that can accelerate the process of the learning for
children" (Malakar, 1989). This means that, the better achievement in mathematics learning of children depends on the good home environment and well parents support. There are various factors which can makes students failure in mathematics among them parent's related factors as their occupation, educational background and students learning opportunity at homeetc are the most responsible for student low achievement as well as failure in mathematics. Which are analyzed as below:

## Parents Occupation

Parent's occupation is the main resource of the family income. So, it influence directly and indirectly on students learning as well as their achievement. The occupation of parents, the community surrounding the case of six schools was mostly farming, carrying goods, shopkeeper, driver, and carpenter and involving in husbandry. Some are far from educational background, i.e. illiterate. If the parents from well family i.e. parents involving in good occupation then they can crate appropriate educational environment at home for their children.

Generally, the parent's occupation indicates their economic status. If the parent's economic status is strong then they can fulfill their daily requirement and they can arrange the extra educational facilities. Reverse of this, if the children's are from economically poor family. The students neither receive proper attention at school nor get proper studying facilities and well guidance and counseling for learning at home. Fact of this, students obviously get low academic performance as well as failure in mathematics. The researcher discuss with the students, parents, teacher and head teacher about parents occupation and its impact on their children learning in mathematics. The responses found from the interview were as below:
'My family income is based on agriculture and labor. It is difficult to manage our daily expenditure. They always focus only their forms rather than my study. So, my parents don't have money to pay for tuition class to improving mathematics'. - (Failure Girl Student)
'I have no answer when my parents ask, is there any possibility to getting job after your study? What will you do after your study? Many educated person are got unemployment. So they always influence to gain about the job of ancestor. They give less parity to school education. After SLC they will send me to join in army or,overseas for work'. - (Failure Boy Student)
'We always engaged in field so, we can't support and proper guide to our children for learning mathematics. O ur economic status can't permit to make educational environment for our children. As a result we can't send regularly our children at school and provide extra tuition classes'.- (Parents)
'M ost of the parent's depend on their traditional occupation and they have forced their children to do same occupation continuously. So the children spend their more time on their ancestor occupation rather than studying. Most of the students from such community are poor in mathematics performance'.

- (Math Teacher)
'This is rural area. M ost of the people are marginal in this area. F ew of parents are able to involve in well occupation and they are only fulfill all the necessities of their children. Students who get well educational environment and facilities are well in their study'. $\quad$ - (Head Teacher)

From the above view of respondent shows thatmost of the parents are busy in their working field. They are unable to pay time for their children and can't give well guidance and counseling about study. But, students who get well facilities for learning activities are well in their academic performance and students who are not well facilitated from their parents are poor in their study. Hence, parent's occupation is the one of the cause of low achievement as well as failure in mathematics.

## Educational Background of Parents

Parents play vital role in the education of their children, whatever children age is either he/she study in collage or, in school. If the parents pay attention to their children they make more scholastic achievement then those who are ignored. In the field of education most of the educated parents are conscious and serious to caring their children rather than literature and illiterate parents because they know about the value of education. They give efforts to maintain their social life and access to different opportunity enhancing by education to their family. On otherhands, most of the illiterate parents do not care of their children in learning activities. They only send their children to school but, they do not care of them seriously what they are studying. Parent's education background mostly influence in student academic achievement. Parent's responsibilities to be teach their children about basic knowledge of life and provide right vision about important of education. Educated family is always serious rather than literature and illiterate family in the point of view providing supportive home environment, habit formation about study, and advising. Hence, researcher discuss with student, parents, teacher and head teacher about parents educational background and its affect to their children learning in mathematics. The following response was found from the interview as:
'My parents are illiterate. They always go to work out in the field. They sent me school when our seasonal work was finished. They encourage to study but, they can't
help solving the mathematics problems as well as unknown about such of anothereducational programmed and problem'.- (Failure Student)
'Education is only for upper class people to fulfillment their willing. We are lower class illiterate people. What can we do after studying? There is no any fix possibility to get job after study. We have various problems so,it is obliged to dropout our children from school without completing their study because it is enough that our children can solve their reading and writing problems from school'. - (Parents)
'I am literate and also serious about children education. When my children arein primary level, I am able to help properly their mathematics problems and such others educational problems. But, now days they are in secondary level so, I am unable to help them on their study because I have no any idea to solving the mathematics problems. It is also difficult for me'. - (Parents)
' M ost of the parents of our student are illiterate so, they can't help their children for learning mathematics. But, some of the parents of our students are literate also unable to provide proper guidance for learning mathematics because lack of appropriate mathematics knowledge. Due to this reason most of the students are poor in mathematics'. - (Math Teacher)
'This is rural area, Most of the parents of this areas are back warded socially, culturally, economically, geographically and educationally. They are always busy on their household work. They send only their children at school but, do not care about what they are studying and how is their academic performance'.

- (Head teacher)

From the above view the researcher concluded that most of the parents in rural areas were illiterate and they can't provideappropriate guidance for their children at home. Due to lack of parents appropriate knowledge about mathematics, some of literate parents also unable to help their children to solving their mathematics problems. But, few of educated parents are taking responsibility to providing the educational environment at home, so their children always good in academic performance. Hence, parents education play vital role to learning mathematics for their children. It is one of the most infusing factors which can makes students failure in mathematics.

## Learning opportunity Provide by Parents at Home

Home is the first school and parents are the first teacher of every child's. Every child's academic performance is depends on their educational environment provided bytheir parents and how much do they help and give opportunity to learning at home. According to educational expert from the national science foundation (1997), found that 'Younger children are natural mathematicians because of their curiosity and their desire to explore and experiment. When parents encourage their children to ask, question, help explore and describe the natural word, they are helping building and interest in math. The children who have such experience when they are very young develop an enjoyment for and a confidence in mathematics that play off as they get older'. This means if the parents provide suitable learning opportunity to their children at home then it strongly influence positive attitude towards learning mathematics. Finally, they achieve better in academic performance.

Every one accepted that mathematics is more difficult rather than such other subject. If parents participate every learning activities of student such as help in homework, provide essential learning materials, motivate to study and discussing about their
learning problems then obviously, student get better achievement in mathematics. In other hands, if students can't get proper opportunity to learn mathematics at home for every manner then obviously, they get poor performance in mathematics.Learning opportunity provide by parents for their children at home is most influencing factors for students poor academic performance. Researcher discussed with students, parents and teachersabout students learning opportunity at home and its impacts on learning mathematics. The following responses were found from the interview:
'My father and mother always go to work in the field, at that time I have to contribute my family by working in the field. After school it is my duty to go shaper on day and at night there is no light available in my home. So I can't prepare homework and study well at home'. - (Failure boy student)
'U sually, I go to India for foreign employment. When I was not at home at that time my children engage every household work as plough, carrying goods, cutting grass etc. we can't give them proper learning and preparing opportunity at home because it is obliged to us that they are always busy in household work'.

- (Parents)
'My parents always depend upon agriculture and labor, which is not sufficient for learning and studying. They can't help and manage appropriate educational environment for us because of poor socio-economic status. Factof these, we can't get proper learning opportunity at home'. - (parents)
'M any of parents in these areas are illiterate and economically back warded. They focus them to be engaged on parent's supports. M ost of the students in class do not complete their homework because they can't get proper support and
learning opportunity from their parents. So, they do not have leisure time to study at home. Those students are got frequently failure in mathematics' .- (Math Teacher) From the above response the researcher concludes that most of the students did not have proper learning opportunity at home due to their household work and parent's poor socio- economic status. Parents are always busy on the working field and their children also go to help together with them. Furthermore, students can't complete their homework at a time and parents can't provide proper learning environment at home due to their household work. Hence, this means most of the students in rural areas are cannot get proper learning opportunity from their parents at home. So, they got low achievement as well as failure in mathematics.


## Teacher Related Factors as Causes of Student Failure in Mathematics

Teacher means, the synonymous of role model, mentor, counselor, disciplinarian, book keeper, planner and many more.Today's world a teacher role is multifaceted profession. Teacher has the responsibility to be good role model in class and out of classroom. They have to help student's poor concepts about subject matter through classroom by well instruction and presentation. Teacher need to impart knowledge of their subject matter and active participation to teaching and learning activities such as prepare lesion, manage the classroom, meet with the parents and work closely with school staff. They should able to meet the need of students varying abilities within the same classroom and posses to teach them with on the basis of similar background, knowledge and motivation through using different methods and materials.

Teacher is the well guide and counselor for student's educational way. His/her positive behavior and responsibility towards students, influence positive attitude in learning and personality development. Those teachers who are academically qualified,
well trained, proper teaching and appropriate knowledge about subject matter can understand student'sproblems; fulfill their need, skill to manage the classroom, and motivate them to work hard for their mathematics learning. If the teacher able to make student feel easy on the subject matter they easily understand and solve the mathematics problems. As a result they can achieve better in mathematics. Hence, teacher related factor as teacher qualification, assessment and reinforcement in classroom, behavior of teacher etc are the responsible factors for student low achievement as well as failure in mathematics. Which are analyzed as below:

## Teacher Qualification

It is difficult to define the good and qualified teacher. How much impact can we expect from qualified teacher? And what characteristic do qualified teacher looks? Etc are not measurable behavior. But, in the context of Nepal, school and communities have always determined the best teacher they could get their students success in examination. Hence, teacher qualification directly influence in students achievement.

Generally, teacher qualification means they most have to demonstrate their competency on subjective knowledge, proper teaching skill in reading and writing and appropriate understanding about related level curriculum. This requirement must be met concern state required certification, passing a license test in related subject and getting pre- service training, on the job training and refreshment training about teaching. In other words, those who are exempt from the core academic requirement and providing consulting service to students with disabilities such as adjusting for learning, adapting curricular environment, implementing positive behavior, supporting in classroom and helping to students with accommodation is known as qualified teacher. If teachers have not such qualification for related level then he/she
can't provide appropriate subjective knowledge for students. Finally, it influences negative attitude towards learning. Hence, some variable related to the teacher qualification taken from interview, which is analyzed as following table.

Table-4.1

## Demography of Teachers

| S.N. | Teacher Name | Qualification | School <br> Name | Training | Experience | Address |
| :---: | :--- | :---: | :---: | :---: | :---: | :---: |
| 1 | BhimBahadurBud <br> hathoki | B.Sc, B.Ed | S.K.S.S. | Trained | 11 years | Bijashowary-3 <br> Rukum |
| 2 | TikaramAcherya | I.Sc, B.Ed | S.B.S.S. | Trained | 6 years | Kalagaun-4 <br> Salyan |
| 3 | ParkashBhandari | M.Ed | S.T.J.S.S. | Trained | 8 years | Dadagaun-5 <br> Salyan |
| 4 | TufanShingThapa | B.A, B.Ed | S.S.J.S.S. | Trained | 7 years | Khlanga-2 Salyan |
| 5 | Pram Basnet | B.Ed | S.M.A.S. | Trained | $5 y e a r s$ | Banjhakada-4 <br> Salyan |
| 6 | Jhalak Pun | B.Ed | S.J.J.S.S. | Trained | 2 years | Purtimkada-7 <br> Rukum |

From the above table it shows that, the present status of the teacher qualification.
There are most of the teacher are qualified, experience and well trained for secondary level. They got knowledge about new teaching method and strategies from training but, due to the large number of students, poor economic condition of school,unavailability of proper teaching materials teacher can't apply those activities in classroom, which are gained from teacher training. So, it's influence student's low achievement in mathematics.Teacher qualification also most responsible factor for student's failure in mathematics because teacher needs not only the knowledge about particular subject but, also must need pedagogical knowledge about related subject.

## Assessment and Reinforcement in Class

Students in classroom are from different socio-cultural environment and different earlier mathematics background. Teachers have responsibility to be aware and formulate them appropriate teaching program to cover the students as higher to low achiever. If teacher apply the continuous assessment in classroom teaching then they can be able to identify the student's weakness about in learning. When teacher able to find students problems about learning mathematics then he/she applies new technique of teaching method and strategies for improving their mathematics achievement, it is only possible if teacher is qualified and well trained. Hence, such teacher only can use different instructional technique on the basis of student's capacity and their cognitive level. If teacher applies appropriately continuous assessment technique then it influences better improvement in mathematics achievement.

Assessment and reinforcement always come together in classroom teaching. Continuous assessment system provides aware about students study level and reinforcement encouragesimproving the rate of learning. If the teachers do not apply continuous assessment system and concepts of the reinforcement in classroom teaching then students will be unknown and can't able to identify their weakness and ability to studying level. Assessment and reinforcement also most influence factor for student's failure in mathematics. Thus, the researcher discuss with students, math teacher and head teacher about impact of assessment system and reinforcement in students learning mathematics. The following responses were found from interview:
'Teachers are experienced and trained but, they do feel lazy to apply new knowledge in classroom gain from training. Teacher always give homework but,
do not check continuously. So, we can't correct our mathematics problems at a time and can't get well reinforcement and feedback from the teacher'. - (Failure Student)
'I was tried to takes continuous unit test and monthly test in previous days. But, I can't get regularly support from the students and their parents. When unit test and monthly test is started at that time most of the students do not participate in such test and they bunk the class. In this situation how can we apply continuous assessment system and provide reinforcement feedback to all of the students for their better achievement in mathematics'. - (Math Teacher)
'We want to use student oriented teaching method and continuous assessment system with reinforcement and motivation in classroom teaching. But, due to the large number of students and lack of proper means and resources so, we can'table to apply this program in classroom teaching'. - (Math Teacher)
'F ormally, school manage three times examination a year to measure the students achievement level and to inform their parents about their achievement in each and every subject. But, other type of test like unit test, weekly test and monthly test depends on subject teacher'. - (Head Teacher)

From the above view of students, math teacher and head teacher its shows that teacher are qualified and well trained in subject matter but, they feel lazy to use their active participation on teaching activity. They give homework but, do not check properly. They do not provide proper guidance, reinforcement and feedback to students about study. To evaluate and measure the student's achievement they were taken only terminal and final examination in a whole academic year. Hence, finally the researcher concludes that there is lack of continuous assessment system and lack of proper reinforcement in mathematics teaching. So, it's influence in student's poor
achievement as well as got failure in mathematics. Thus, to improve the students achievement in mathematics there is necessary to apply continuous assessment and provide continuous reinforcement and feedback for students in learning activities.

## Behavior of Teacher in Classroom Teaching

Teacher is the role model and teaching is the both of art and science. Here, the teacher behavior focuses on the relation between teacher and students. It is the well understanding through teacher and students about teaching and learning activity. Students during at school period learn how to play and work with other also; they learn how to respect other.Yasseen, Bassam M. Bany(2010), included that, 'behavior of teacher in teaching means arranging the condition of learning that are external to the learner. It is related to all the facilities provide by the teacher which could facilitate students learning and increase their involvement in different classroom activity. Those facilities such as providing clear instruction, obtaining students attention, arranging materials required, responding to students need, explaining clear, providing feedback and dealing effectively with students problems'. This shows that teaching is chilling occupation for teacher. If teacher can't manage appropriately their teaching behavior then it'sdirectly influence in students learning activity.

Teacher's positive behaviors in classroom teaching develop strong relation between teacher and students. Students can expose their learning problems about mathematics without any shyness and doubt with teacher. Teachers also understand about student's problems in learning mathematics and help them on the sport. There might be crate kind of educational environment in classroom teaching and learning activity. Thus, researcher discuss with students, math teacher and head teacher about behavior of
teaching in classroom teaching and its impact in students learning mathematics. The following responses were found from the interview as:
'Our teacher always tries to make us learning more. But, when class is started at that time he discusses and spends more time with talent student by asking question about subject matter, i.e. he care only the talent and students who are in front bench. We always passive in class activity because of we are poor in mathematics so, we feel shy to discuss with teacher'. - (Failure Student)
'It is difficult to control the mass of students in classroom. In short period we do not have enough time to give and check homework in classroom. We all are unable to care deeply all the students together in classroom activity and can't provide individually feedback them because due to large number of student. In other hands we have challenge to complete the course at a time. So, infect that generally, we illustrate the problems of mathematics and tell them to do similar manner on problems given in the text'. - (Math Teacher)
'Generally, sometimes I try to involve students in various group works. For this, I have to provide equal chance to learner mathematics in classroom activities. But, most of the students in classroom are feel very nervous and shyness to participate such activity. So, the students do not expose active response in mathematics learning because of their poor previous knowledge about mathematics'. - (Math Teacher)
'As far as possible, we try to provide equal behavior, opportunities and facilities for all the students from our side. We and our school do not differentiate the students on the basis of their personality, cast, economic status and abilities because of all the students are equal for us. Student's educational achievement
depends on their own ability and proper support of their parents not only the subject teacher. So, same case in mathematics'. - (Head Teacher)

From the above view it shows that, most of the teacher teaching behavior found monotones. Teachers are aware only for students study but, do not provide proper guidance and counseling for teaching and learning mathematics. There is no proper interaction between teacher and students and. It is found biasness teaching between talent and poor students. Few of talented students taking teaching advantage from class and various poor students are not interested to learn mathematics. Finally, the researcher concludes that there is lack of appropriate teaching behavior of teacher in teaching mathematics

## Curricular Factors as Students Failure in Mathematics

Curriculum is the fundamental guideline of the formal education system. Its refers not only all the learning experiences to be learn by the students in school but, also overall programs/activity of the school, i.e. students every activities in school and outside of school are the part of curriculum. School mathematics education is compulsory for all students. Mathematics education offersa set of every important perspective techniqueand tools for students present and future lives. It helps in decision making, problems solving, critical analysis, creative thinking and self aware in Daly life.

In the context of Nepal, secondary level education refers as grade nine and ten.Generally, the students who are 14 to 16 years aged are participating in this level. In this grade mathematics has been taught as a core subject as well as optional subject also. The class weightage of this subject is 6 period in week and 100 full marks in class nine and ten. Students must have to obtain 32 marks to pass in this subject.

Secondary level mathematics curriculum has four general objectives and each classes of secondary level as grade nine and ten has 25 and 21 specific objective respectively. To fulfill the objective of this subject it was divided in to different areas as set, arithmetic, mensuration, algebra, geometry, trigonometry, statistic and probability which cover the whole contents of mathematics. Each and every areas of mathematics has fix weightage. It was tried to well integrating the curriculum of mathematics on the basis of student's age, learning ability, need and interest but, there was various problems need to organizing the mathematics content. It is observed that there is lack of horizontal and vertical linkage among the contents including the mathematics curriculum. It was used appropriate language, sign, symbols, selected words and structure are very simple and easy to understand. The objective, teaching and learning activity, teaching method and evolution process are clearly mentioned but, teacher and students are not applying such activity through the direction of curriculum.

In mathematics curriculum there was arithmetic area related to the everyday life of human. It tries to solve the practical problems of the various dimension of the daily life but, the problems are not appropriate and insufficient with respect to the different culture and geographical country as Nepal. Contents were tried to organize in simple to complex and familiar to less familiar order. The curriculum focuses on the children centre method and technique like demonstration method, inductive method, discussion method, experimental, field trip, discovery method etc, but, teacher are not applying such teaching method appropriately while teaching the mathematics in class. Mathematics curriculum focus on the continuous evaluation of student's achievement and evaluation system is based on writing. It is refers four unit test and containing five marks, two terminal test and each containing ten marks and final examination for sixty marks but, every school are mention the gap between two unit test and terminal
test in terms of the time and percentage of the course content. It is only give emphasis on the paper and pencil test. Curriculum indicates to determine the content on the basis of position of student's achievement. Teachers are taken examination for only to identify the student's achievement and difficulty level of students in mathematics.

Secondary level mathematics curriculum was the combination of different areas of mathematics. Each and every areas of mathematics obtain fixed marks in SLC examination. According to the specific table, different areas of mathematics as arithmetic obtain 16 marks, geometry obtain 24 marks, algebra obtain 24 marks, mensuration obtain 14 marks and sets, static, probability, trigonometry obtain 22 marks in SLC examination. If the students got low achievement or, if they are unable to solve the problems concern each areas of mathematics then they got failure in mathematics. Researcher discuss with students and math teacher about curriculum of mathematics and its enrollment to makes students failure in mathematics in SLC examination. The following responses were the found from the interview as:
'I feel mathematics is very much hard subject rather than other subject'. can't solve the mathematics problems concern geometry because teachers do not teachgeometrical part'.
can'tunderstand problem concern geometry and mensuration because that is very much abstract'.
'Teachers are unable to complete the mathematics course at a time so; we can't revise it before the examination'.
'We try to understand mathematics and achieve well in internal examination which is taken by school but, we unable to solve the mathematics problems which are prepared by SLC board, i.e. pattern and structure between school made question and SLC
board made question are not interrelated to each other so, we feel confused to solve mathematics problems'. - (Failure Students)
'Secondary level mathematics curriculum is very much lengthy and it has abstract content on the basis of student's cognitive level and age. We unable to complete the mathematics course at a time. In other hands, students who are from different lower secondary school are very poor in mathematics. They have no prior knowledge about the every content of mathematics. In this situation we can't able to apply properly the direction of mathematics curriculum. So we act what we can do'.

- (Math Teachers)

From the above view of students and math teachers its shows that mathematics content are included for the fulfillment of objective. The content of curriculum which guides the teacher for what and how much subject areas should be taught in the classroom. Secondary level mathematics curriculum tries to place the need and interest of students but, it is difficult to implement properly in which areas of Nepal. Due to lack of teacher training, lack of instructional materials, insufficient knowledge about curriculum, large number of students, overload of teacher etc are the most obstacle factors for implementing the curriculum. Hence, the curricular factors also most influencing factors that makes students failure in mathematics.

# Chapter V <br> SUMMARY, FINDINGS,CONCLUSION AND <br> RECOMMENDATION 

After research analysis and interpretation of collected data, this chapter deals with the summary and major findings of research, conclusion draw from findings and recommendation to further study. So, this chapter is presenting as follows:

## Summary

This is survey research related to "causes of student's failure in mathematics in SLC examination on rural community school of Salyan district. The main objectives of this study were 'to find out the causes of students failure in compulsory mathematics in SLC examination' and 'to find out the students difficulties in different areas of compulsory mathematics'.To fulfillment of this objective the researcher obtained data from one hundred twenty sample students (failure students in mathematics in SLC examination), twenty parents, six math teachers and six head teachers of different six community school of Salyan district. Questionnaire and semi-structure interview schedule were the main tools for the collecting data and data are analyzed and interpreted in qualitative and quantitative description.

Generally, the problem of student's failure in mathematics is not only in Salyan district, but it is also the problem of whole country. Here, this research tried to find the most influencing factors that makes students failure in mathematics in SLC examination spicily, on rural community school. There are various factors which makes students failure in mathematics but, this research only concern to analyzed only the students related variables (prior- knowledge, curiosity to learn math, time spent to learn math, participation in classroom), parents related variables (parents
occupation, parents educational background, learning opportunity at home provide by parents), teacher related variables (teacher qualification, assessment and reinforcement in class, teaching behavior of teacher) and curricular factors. Which are analyzed on the basis of research by Salman, M.F. et.al.(2012), causes of mass students in senior school certificate mathematics examination, view by teacher and students on do, thejournals of education.

## Finding of the Study

This is survey research design with qualitative description related to 'causes of student's failure in mathematics in SLC examination. There are various influencing factors to makes students failure in mathematics. Mostly, students poor priorknowledge about mathematics, student do not have curiosity to learn math, they do not spent more time to learn math, lack of teaching and students participation in classroom activity, parents occupation, parents education background, students learning opportunity provide by parents at home, teacher qualification, teaching behavior, evaluation skill and reinforcement in classroom, difficulties in teaching and learning mathematics etc are the influencing factors concern to students failure in mathematics. The major findings of this research were mentioned as below:

## Findings on the Basis of Student Related Variables

Students are the main focus point of teaching and learning activities so, students self and their self-activity are the main causes to be failure in mathematics. In this research student's prior-knowledge, curiosity to learn math, time spent to learn math and participation in classroom activity were found students related variables as student's failure in mathematics. The followings were the major finding of research obtained from questionnaire and interview as:

- There are $72.5 \%$ students agreed that they got failure from previous class. This shows that, students who have low achievement and failure in mathematics from previous class are got failure in mathematics in SLC examination because of their poor-prior knowledge about mathematics.
- There are $61.67 \%$ students agreed that they are far from the school. Due to this reason, they are unable to complete their homework at a time and irregular in classroom participation.
- Most of the students are not interested to interaction with teacher and their friends in classroom activity. If they are not understand about any mathematics problems in classroom teaching then also do not discuss and ask more questions to teacher due to their shyness and nervous.
- There are $75 \%$ students agreed that teacher can't give equal time for each student to learning mathematics in classroom due to large number of students are in single class. This shows that, there is not appropriate learning environment in classroom, due to large number of students are keeping in single class.


## Findings on the Basis of Parents Related Variables

Home is the first school and parents are the first teacher of every child. Proper learning environment, parent's behavior and learning activity supported by parents is strongly related to student's mathematics achievement. In this research parentsoccupation, parent's educational background, learning opportunity provides by parents at home were found the parents related variable as their children failure in mathematics. Following were the findings of research obtained from questionnaire and interview as:

- Most of the parents are depended on agriculture and labor. They always busy on their working field and they can't spend proper time with their children. Hence, parents occupation directly affected in students study.
- There are $60 \%$ students agreed that they can't got proper support from their parents due to their illiteracy and $67.5 \%$ students agreed that parents can't manage necessary materials to study math due to their poor economic status. This shows that, most of the students do not get proper learning opportunity and support from their parents at home.
- Parents are economically backed warded so; they can't manage regularly tuition class to improving their children achievement in mathematics.
- Few of parents are well educated and involving in good occupation. Their children are achieving better in mathematics as well as each and every subject. This means parents occupation and educational background directly influence on their children achievement in mathematics.


## Findings on the Basis of Teacher Related Variables

Teacher is role model as well as ideal person of each and every student. Teacher's behavior and character influence student's behavior and their learning activity. In this research teacher qualification, evaluation skill of teacher, teaching behaviors of teacher were found the teacher related variable as student's failure in mathematics. Following were the finding of research obtained from questionnaire and interview:

- Teachers are qualified and experienced but, they do not apply proper teaching method and do not use teaching materials while teaching mathematics.
- Teachers are unable to manage classroom properly and classroom teaching was not interactive due to the large number of students.
- There are $85.83 \%$ students agreed that homework give by the teacher was not being checked continuously. For this reason, students can't correct their mathematics problems either they have done right or wrong.
- There are $60.83 \%$ students agreed that teacher was irregular in classroom $34.17 \%$ students agreed satisfactory and 5\% students agreed that teacher are regular in classroom. This shows that, lack of students and teacher regularity in classroom teaching and learning activity.
- There are $75 \%$ students agreed that teacher unable to complete the mathematics course at a time and $25 \%$ students agreed that it is necessary to need extra class to complete the mathematics course.
- Teacher only aware to the students about their study but, do not provide motivational treatment in teaching activity and do not give regular feedback to students about their learning.
- In classroom teaching,teacher discusses and spends more time with talent and students who are in front bench about subject matter. This means it was found biasness teaching between talent and poor students.


## Findings on the Basis of Curricular Factors

Following were the finding of research obtains from the questionnaire and interview:

- Teacher's perception about mathematics curriculum is positive but, the practice of curriculum theme is not reflected in classroom teaching.
- Summative types of evaluation are used in student's evaluation.
- The test question paper, which are made and prepared by subject teacher are not standardized and unscientifically marks were distribution.
- There are $42.5 \%$ students agreed that they are poor in geometry, $25 \%$ students agreed that they are poor in algebra, $16.67 \%$ students agreed that
they are poor in trigonometry and $15.83 \%$ students agreed that they are poor in arithmetic. As a result it shows that, student's feel difficulties in each and every of mathematics but, among them most of the students feel more difficulties in geometry and after then algebra, trigonometry and arithmetic continuously.


## Conclusion

Mathematics education has given an important place in the curriculum of all level of school and university education.Student feel mathematics is difficult subject so; most of the students get failure in this subject. It is not easy to say that spicily, which factors do influence the student's failure in this subject. But, this research tried to find on prevailing issue to students got failure in mathematics in SLC examination.On the basis of finding, the research concluded that most of the students have not curiosity and motivation to learn math. They do not pay proper attention and regular in class. They are psychologically afraid from mathematics due to the lack of prior-knowledge about this subject. Student's passive participation in class, incompleteness homework at a time, peer-group influence, large number of students in single class, shyness and nervousness to interact with teacher about mathematics problems in classroom teaching,lack of proper guidance and counseling provide by parents, poor educational background and lack of their support in learning activity, poor economic status, lack of proper interaction between teachers and students in teaching activity, irregularity of teacher attendance in classroom, lack of continuous assessment system in teaching, lack of continuous reinforcement and feedback for students, etc. are the main responsible factors that makes students failure in mathematics.

## Recommendations and Suggestions

After concluding the finding of research, it is important to suggest some recommendation for the educational implication and further study to improving the rate of student's failure in mathematics in SLCexamination.

- Teacher should be emphasized on student's prior-knowledge about subject matter while teaching in class.
- Educational program enhance the capacity of math teacher to identify the necessity and learning capacity of every student in mathematics.
- Continuous assessment system and reinforcement should be implemented to improve the student's achievement in mathematics.
- It is necessary to be continuous communication and strong relation among students, parents and teacher to improving the students result.
- The curriculum of mathematics should be made relevant to the daily life of students.
- Appropriate learning environment should be provided to the students at home and school.
- It is better way to improve the mathematics achievements of students if similar study can be done from primary to secondary level.
- This study was limited only within the Salyan district. It conducted by using small sample size and finding of this study reflect in the broad areas. It can be more valuable, if students would be done with covering broad areas.


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## Appendix-A

## Student Questionnaire Forms

Name:
School Name:
Mother Tongue:
Father Occupation:
Qualification:

Read the following questions and tick $(\checkmark)$ the best alternative

1. Do you failed in mathematics at any class of lower secondary or, secondary level? If yes then which class do you fail
a. Yes
b. No
2. Do you participate pair work in class room, while learning mathematics?
a. Yes we do b.We don't know about it c . We have not enough time to discuss
3. Do you internally interested in learning and solving the problems of math?
a. Yes I have
b.No, it'sboring
c. I can't understanding math
4. Does your school have library? How do you use your leisure time?
a. Yes, we do use
b. Yes, we don't use
c. Yes, we don't have enough time d. No
5. Do your guardians discuss about your progress with your teacher?
a. Yes, always
b. sometime
c. They are not interested
6. Do your family members help to solve your mathematics problems?
a. Yes, they do
b. No, they are illiterate
c. They have no enough time
7. How does your family help to manage your necessary materials and study math?
a. Providing tuition and extra class
b. They can't, because of lack of money
8. How do you manage your time to study math?
a. Routine based
b. Exam based
c. irregularly
9. Does your mathematics course completed at a time?
a. Yes
b. No
c. We need to take extra class
10.Does your teacher give and check your homework?
a. Always
b. once a week
c. sometime
d.

Never
11.Does your teacher give equal time to each student in your class?
a. Yes, he has b. No, he can't due to large number of student
12.How often does your teacher take your test?
a. Unit wiseb. Monthly
c. terminally
d. Yearly
13. How does your teacher solve the problems of math?
a. Teacher himself
b. Lets the chance to students
c. Infusing to student to solve the problem
14. Which materials do you use to preparing your examination?
a. Text and notebook
b. Practice book
c. Model question
15.How does your teacher participate in the class room?
a. Regularly
b. irregularly
c. Satisfactory
16.How is your math teacher in subject matter?
a. Got appropriate knowledge
b. Not appropriate knowledge in unit wise
c. Can't give clear concept
17. Which area does your school is situated?
a. Far from home
b. Near from home
18. Which area do you feel difficulties in the field of compulsory mathematics? And why?

Ans
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$

## Appendix-B

## Guideline for Interview with Students

Name: Age:Roll No:
Address: ..... Sex:

The interview with students was taken on the basis of following key point:
$>$ Learning opportunity at home
> Interest towards subject matter
$>$ Teacher behavior in classroom teaching
> Parental support on learning mathematics
> Homework and class work activity
$>$ Educational background of family
> Time spent for learning mathematics
> Relation between peer-group
$>$ Participation of teacher and students in classroom
$>$ Evaluation system of school
Daily activity at home

## Appendix-C

## Guideline for Interview with Parents

Name: Age:
Qualification: ..... Sex:
Address: ..... Familysize:
Occupation:
The interview with parents was taken on the basis of following key points:
Parents view about education
$>$ View towards mathematics
$>$ Support for their children learning
$>$ View about cost of education
$>$ Study environment provide by parents at home
$>$ Reinforcement provide by parents
Availability of study materials at home

## Appendix-D

## Guideline for Interview with Math Teacher

Name:
Sex:
Qualification:
Age:
Experience in teaching profession:
Address:

The interview with math teacher was taken on the basis of following key points:
$>$ Problems in teaching mathematics
$>$ Role of teaching and learning environment in mathematics achievement
> Use of instructional materials in teaching
$>$ Encouragement to learning math
$>$ Important of reinforcement and feedback in mathematics achievement
> Regularity of Students participation in the classroom
$>$ Learning habit of students
$>$ Teaching method

## Appendix-E

## Guideline for Interview with Head Teacher

Name:
Sex:
Qualification:
Age:
Experience in teaching profession:
Address:

The interview with head teacher was taken on the basis of following key points:
> Learning environment provide by school
> Instructional materials availability in the school
$>$ Communication between parents, teacher and students
$>$ Supervision, monitoring and evaluation students and teacher
$>$ Evaluation system of school
$>$ Students opportunity for learning with teacher
Learning opportunity for weak students

## Appendix-F

## Selected Sample Schools

| S.N. | School Names | Located place |
| :---: | :--- | :--- |
| 1 | Shree TribhuvanJana Secondary school | Dadagaun-5 Salyan |
| 2 | Shree Kalika Secondary School | Kajari-3Salyan |
| 3 | Shree Shiva Jan Secondary School | Khalanga-2Salyan |
| 4 | Shree Jana Jyoti Secondary School, Farulachaur | Bhalchaur-3Salyan |
| 5 | Shree MahendraAdarsha Secondary School, <br> Banjhakada | Banjhakada-5Salyan |
| 6 | Shree Balshakha secondary school, Madamkanda | Kajari-5 Salyan |

