

**INTERNAL ASSESSMENT AT SECONDARY LEVEL: STUDENTS' PERCEPTION AND
TEACHERS' EXPERIENCES**

**A
THESIS
BY
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RECOMMENDATION FOR ACCEPTANCE

This is to certify that Mr. Surendra Bhattarai has completed his M.Ed. thesis entitled “Internal Assessment at Secondary Level :Students’ Perception and Teachers’ Experiences” under my supervision during the period prescribed the rules and regulation of Tribhuvan University, Kirtipur, Kathmandu, Nepal. The study embodies the result of investigation conducting during the period of 2023-2024 under the Department of Mathematics Education, University Campus, Tribhuvan University, Kirtipur, Kathmandu. I recommend and forward his thesis to the Department of Mathematics Education for the final viva-voice.

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Asst. Prof. Lok Nath Bhattra

Supervisor

Date: -.....

Dedication

Affectionately

dedicated to

My respected father Durga Datta Bhattarai, mother Sumitra Bhattarai and my all-family members whose support, love, encouragement and sacrifices made me a person who I am now.

Declaration

This dissertation contains no any material which has been accepted for the award of another degree in any institution. To the best of my knowledge and belief, this research is truly based on my own effort and doesn't contain any materials that were published earlier in this university as well as others except due acknowledgement has been made.

.....

Surendra Bhattarai

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Abstract

The thesis entitled “Internal Assessment at Secondary Level: Students’ Perception and Teachers’ Experiences” aimed to find the perception of students and experiences of mathematics teachers towards the practices of internal assessment at secondary level. This study was based on mixed method research design. This study was delimited to grade ten students and their teachers of four community schools of Banke district. A total of 169 grade X students and four mathematics teachers were randomly selected as sample of the study. Survey questionnaire and interview guideline were used as research tools to collect the data from students and teachers respectively. The result of this study concludes that both students and teachers have positive perception towards the practice of internal assessment system in mathematics. Internal assessment increases the regularity of students in the classroom. Internal assessment helped teachers to maintain the students’ discipline. There are several components and indicators to conduct internal assessments, although teachers have not followed all the criteria. The curriculum expects assessment for learning but the real practice shows it as assessment of learning. Terminal examinations is effective to know the students’ excellencies, weakness and also to work for learning improvement but teachers faced challenges to construct quality tools for terminal examination. Project work emerged as a vital component of internal assessment and students are interested to participate on more project works. But students are not satisfied with inadequate practice of project work, bias grading practices of teachers. Internal assessment increased the collaborative learning and creative thinking power of students in mathematics. Due to lack of materials, training, large number of students in classroom teachers were not followed all the criteria of internal assessment. Both teachers and students believed that ICT is very useful for the internal assessment but ICT was not properly practiced on community schools of Nepal.

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Introduction

This is the Master thesis entitled 'Internal Assessment at Secondary level: Students' Perception and Teachers' Experiences'. This introduction part consists of background of the study, statement of the problems, objectives of the study, research questions, significance of the study, delimitations of the study, and operational definitions of the key terms.

Background of the Study

Assessment is one of the key components of any educational program. It is a continuous process for determining knowledge and competencies of learners with an aim of making improvement in their current learning status. Somewhere assessment and evaluation are defined like same but these two are not exactly same. Evaluation is the process of checking every aspect of a learner using an established set of criteria. It is the process of judging the quality of students work on the basis of established criteria, and assigning a value to represent that quality (Brink & Bartz, 2017). In this concern different educationist define evaluation as follows "Evaluation is the process of determining merit, worth, or significance; an evaluation is a product of that process" (Ranjan, 2019). "Assessment is the process of gathering and discussing information from multiple and diverse sources in order to develop a deep understanding of what students know, understand, and can do with their knowledge as a result of their educational experiences; the process culminates when assessment results are used to improve subsequent learning." (Huba and Freed, 2000) as cited by Ranjan (2019). In this way designing and carrying out the assessment is important for both teachers and students. Assessment is divided into two types formative and summative assessment.

Black and Wiliam (1998) define formative assessment as "all those activities undertaken by teachers, and/or by their students, which provide information to be used as feedback to modify

the teaching and learning activities in which they are engaged”. Formative assessment is the continuous process that takes place throughout the learning activities(Hendrickson, 2011).

Regarding the summative assessment, Ur (2013, P.167) as cited by Sah (2021) has defined “it as the process of evaluating students to provide only a grade, often expressed as a percentage, offer no specific feedbacks on aspects of performance and are designed to summarize or conclude a period of learning”. Mostly summative assessment happens at the end of learning sequence.

Formative assessment is the form that is widely accepted in constructivist learning which calls for elimination of grades and standardized tests. Here the learners are evaluated in the process of creating their competencies and abilities(Thomas, 2023). Formative assessment is a crucial educational practice that involves gathering and analyzing information about a student's learning progress throughout the learning process. Unlike summative assessment, which is typically used for grading and evaluation at the end of a unit or course, formative assessment is ongoing and focused on providing feedback to both teachers and students(Bennett, 2011). This real-time feedback allows educators to adapt their teaching methods to better meet the needs of their students and make necessary adjustments to the curriculum. Formative assessment techniques can take many forms, including quizzes, observations, discussions, and self-assessment and they play a pivotal role in fostering a more dynamic and responsive learning environment, ultimately enhancing student engagement and learning outcomes.

Assessment affects decisions about grades, placement, advancement, instructional needs, and curriculum. Assessment plays an important role in the process of learning and motivation. Freeman and Rossi (2004, P.38 as cited by Sah (2021) mentioned an assessment as a systematic, rigorous and meticulous application of scientific method assess the design, implementation, improvement or outcomes of program. Teacher can find both ability and inability of the students

through internal assessment and hence can provide the necessary feedbacks in the concern area which plays role to motivate and enhanced the learning output of the students. Internal assessment is a process of assessing the understanding of students. In this process, schools and teachers judge the student's performance based on their understanding of the course curriculum. This process of evaluating students does not require the involvement of any person outside the institute. In Finland, the purpose of assessment is to guide and encourage studying and self-assessment skills. Assessment measures a combination of educational progress, work skills, and behavior(Hendrickson, 2011). Classroom assessment practices in Finland allow teachers to evaluate and change instruction based on student needs.

Nepal government has implemented the provision of two levels of school education in the formal education system: first, basic education that starts from the Early Child Development (ECD) program to grade VIII, and second, secondary education that starts from grades IX to XII (MoEST, 2018). Class work, project work, community work, unit test, achievement test, terminal exams, observation, formative and innovative work are the general tools and techniques of Continuous Assessment (CA)(Pradhan, 2021). Also, frequent formative assessment enables teachers to identify students who struggle with particular topics and provide timely intervention. The teacher works with individual students or small groups to help students with certain topics. Internal assessment is meant to contribute in enhancing education quality through self-realization and feedback mechanism but in Nepal there is trend of dropping internal assessment by students as the level and year of academic class increases(Nepal, 2017). Student learning will be enhanced if high school teachers effectively use formative assessment to provide feedback to students, and they individualize instruction based on the assessment feedback(Brink & Bartz, 2017). The government of Nepal introduced Letter Grading System (LGS) in 2015 A.D as a

reformatory way of evaluation system. It has been discovered that teachers have not yet thoroughly understood the idea and application technique of letter grading system (Dhakal & Bhurtel, 2023).

Statement of the Problem

When I was studying at school level there was not the provision of internal assessment in mathematics but there was in some subjects like English, Science, education etc. Still, I remembered we would get the practical marks on the basis of sanitation program, students-teacher relationship rather than reading, writing, speaking practice as mentioned by curriculum. In this concern finding of other research shows that the evaluation system in school education in Nepal is largely guided by theoretical and textbook-based instruction, written examination-oriented evaluation and assessment of learning instead of assessment for learning. (Pradhan, 2021). In this scenario, internal assessment in mathematics has been introduced.

With the rapid technological advances, the increasing level of human knowledge and the evolving perspective of human beings, numerous reforms and innovations have been evidenced in assessment and testing systems around the world (Bhattarai, 2019). Nepal government has implemented the provision of two levels of school education in the formal education system: first, basic education and second is secondary education. Secondary education starts from IX to XII. New curriculum is being implemented at secondary level according to the provisions made by National Curriculum Framework- 2076. Firstly, new curriculum is tested in 2078 B.S for grade Nine then implemented in 2079 from grade Nine and then grade Ten in 2080 B.S. Similarly new curriculum is being implemented in grade Eleven and Twelve from 2077 and 2080 B.S respectively. In this curriculum assessment system is divided into two parts, internal/formative assessment and summative assessment where internal assessment covers twenty five

percent and summative assessment covers seventy five percent at secondary level. Both internal and external assessment have their own criteria's. Specially, for the internal assessment subject teachers are more responsible. Teachers have variable grading practices that involve differentially weighting student achievement evidence in relation to non-achievement factors such as student effort, work habits, previous achievement, parental expectations, and grade consequences. (Deluca et.al. 2018 as cited by Devi, 2022).

Internal assessment (IA) system at secondary level is quite new for mathematics subjects in this curriculum. So, teachers and students both are facing this new assessment system in mathematics subject at secondary level. The government of Nepal introduced the letter grading system since 2015, with no prior preparation, dissemination, or diffusion effort in the education sector. As a result, it caused several issues throughout its implementation (Dhakal & Bhurtel, 2023). From this statement we can say that teachers are struggling for the proper implementation of Letter Grading System. At the same time there is the provision of internal assessment system in secondary level mathematics. According to the National Curriculum Framework 2076, areas for the internal assessment are class participation, terminal examinations and practical / project work. In some cases, for the conduction of project work teacher and students need some resources like proper infrastructures, equipment, human resources etc. In our community school all the necessary materials may not available on time so how teacher and students perceive the internal assessment its unanswered question for me.

In this concern, this study was mainly concerned with internal assessment process on mathematics at secondary level. In my point of view sometimes internal assessment is affected by hello effects, plagiarism like extraneous factors. Our assessment system was paper pencil test dominant even though, these days some teacher assign different project works as part of internal

assessment. As being a student of mathematics subject many questions like what types of activities are being conducted by teachers in the classroom? Does teachers and students are friendly with this internal assessment system? What may be the perception of students towards teacher practices about this system? Also, teacher can provide the grades without conducting proper assignments so it has become crucial to identify how teachers give grades to their students? Do they follow any criteria? These questions hit me time and time. So, I intend to find the teachers experiences and students' perception for the implementation of internal assessment system in mathematics subjects.

Objectives of the Study

The main concern of this research is to dig out the overall process of its practices of internal assessment in school level. So, the following are the objectives of this study:

1. To find the perception of mathematics students towards the practices of internal assessment at secondary level.
2. To explore the experiences of mathematics teachers towards the practices of internal assessment at secondary level.

Research Questions of the Study

For the fulfillment of the above objectives, I have desire to know the answer of the following research questions:

- What are the perceptions of mathematics students about internal assessment system practiced by their teachers at secondary level?

- How do mathematics teachers experience about the internal assessment at secondary level?
- How does institutions support for the implementation of internal assessment?

Significance of the Study

Internal assessment at secondary level mathematics is recently in the practice. Internal assessment has many positive aspects in the classroom as well as to improve the learning in mathematics. Current provisions may need to be modified or changed as its result of implementation so this study helps to know the present practice of IA system in the classroom. Under this provision some teacher can conduct project work more creatively meanwhile some teachers might be facing the difficulties to practice in the classroom. So, this study will explore the different activities of the teachers then needy teachers can get the ideas from others experiences. Some students might enjoy with the activities of IA in the classroom as well as some can feel more complicity for the same job. In this way following points are the significance of this study.

- It would be helpful to share the teachers' practices and experiences about the internal assessment system in the classroom.
- It helps to formulate the policies and program by understanding the real situation / practices of teachers and students.
- The finding of this research would be helpful for the trainer and professional training center to include the experiences of teachers towards the implementation of IA in their training program.

- This study would be useful as a reference material for the new researcher who wants to explore further research related to internal assessment.

Delimitation of the Study

Obviously, every research has both strengths and weaknesses. Conducting the research in a whole country or a large area is very complicated to the single person or any small organization. So, researcher sets the boundaries and that boundaries are called delimitation. The delimitation of this study was as follows.

- This study was delimited to the secondary level schools in Banke district.
- This study included only four secondary level mathematics teachers and 169 students of grade X in the academic year 2080/81.
- This study was delimited to interview guidelines and questionnaire forms to collect the data.
- This study was delimited to the secondary level students' perception and mathematics teachers' experience towards current internal assessment system.

Operational Definition of Key Terms

Operational definitions of key terms for this study will be as given below.

Evaluation. It involves the judgment and analysis of collected data to determine the strengths, weaknesses, or overall quality of the subject under consideration.

Assessment. Assessment is like checking to see what you understand or can do in a certain subject or skill, usually by using tests, questions, or other methods.

Secondary Level. In this study secondary level refers to the education from grade 9 to 12 which starts on the completion of basic education.

Teacher. A teacher is an individual who is trained and qualified to impart knowledge, skills, and guidance to students or learners.

Students. A student is a person who wants to know something about a particular area. Here student means a person who is formally studying at secondary level.

Project Work. Project work involves planning, executing, and evaluating a specific task or set of tasks to achieve defined goals or objectives.

Perception. Perception is how your brain takes in and understands things you see, hear, feel, taste, or smell in the world around you.

Chapter II

Review of Related Literature

A literature review is a written summary of journal article, books, and other document that describes the past and current state of information on the topic of research study (Cresswell, 2009). This chapter includes the detailed review works and their implications on this study. Similarly, the theoretical concept and conceptual frame work are also included under this chapter.

Empirical Literature Review

Chongbang (2021) published /conducted research entitled ' Reflecting Stakeholders' Experiences with Classroom Assessment Practice in the Complex Contexts of School System in Nepal'. The purpose of this study was to work out a functional framework of classroom assessment reflecting critically on the lived experience of stakeholders to practice in the complex school contexts at microlevel. This paper state that the policy informs less test- based internal summative assessment and high use of non-testing assessment in lower classes, which reverses as classes increases. Similarly, from the classroom research, it is found that homework, classwork, class test and terminal examinations are commonly used as instruments of classroom assessment. This study shows that the head teachers and teachers have perceived lack of training as a barrier to carry out Continuous Assessment System (CAS) in practice. It is also found that some of the teachers have not heard about CAS. According to this study CAS recording form is used to fill up when the terminal examination reports are prepared. It is also found that the teachers have understood the essence, meaning and purpose of the formative nature of CAS but failed to implement it in practice. This study claimed that CAS policy is good in its assumption but its policy process is top-down, bureaucratic, instrumental and liner which ignores the complexity of school context and professional expertise of teachers.

Pradhan (2021) published an article entitled 'Assessment for Learning Strategy in Mathematics Instruction: Teachers' Perceptions and Practices'. This paper explores teachers' perceptions about the use of Assessment for learning (AFL) strategy and its practice in mathematics instruction. As mentioned in this paper three types of classroom assessment are practiced in most education systems for different purposes. These are: assessment of learning, assessment for learning, and assessment as learning. AFL is done for the explicit purpose of diagnosing where students are in their learning, where the gaps in knowledge and understanding exist, and how to help teachers and students improve student learning (William, 2011). Studies have shown that the involvement of students in assessment process is crucial to learning. From the interview of his research participants, he found that formative assessment tools practiced by teachers in the classroom were mainly used for summative purposes. A large number of students in a class, students with a poor academic background, overloaded curricula, and school culture were the major hindrances that demotivated teachers to use AFL in the classroom. He concluded that AFL plays an important role in enhancing students' learning and developing their levels of understanding. Finally, he suggested that AFL strategy needs to be implemented in true sense with some improvement in the system including the provisions of training to the teachers, teacher-student ratio, workload of teachers, accountability of teachers and head teacher, reward and punishment, and coordination mechanism among school management committee, resource center, and the line agencies at district and national levels.

Dahal (2019) carried out a study in the area of Formative Assessment and Achievement of Mathematics Students in Public Schools of Nepal. The purpose of this study is to explore the status of formative assessment and students' achievement in mathematics. This study followed survey research design. The study was conducted within the target population 547 community

school mathematics students who have participated in District level Examination in 2014.

Researcher employed simple random sampling procedure to select 232 as the sample respondents from the population. The research concluded that regularity of teachers' responses or feedback on the students' classwork, homework, project work and tests have a creditable role in improving their students' learning performance. Furthermore, project work, a form of formative assessment, helps to improve students' learning performance through creating an opportunity for learning by doing, which also contributes to contextualize the abstract concept of mathematics.

Rai (2018) carried out the research entitled "Students' Perception on the Internal Assessment". The objectives of this study were to find out assess the practice of internal assessment in semester system and to explore students' perceptions in terms of tools and techniques of internal assessment. It was based on survey research design. Simple random sampling strategy was used to select sample for the study. Forty students were selected from the department of English Educations who had been studying in 4th semester. The main tool used for data collection was questionnaire. Both, primary and secondary sources of data were used. After analysis and interpretation of the data, it has been found that majority of the students had positive perception on the practice of internal assessment in semester system. They viewed that assessment system enabled them for in-depth learning and active interaction developed their confidence level. However, less number of students perceived that the practice of internal assessment system was not systematic. They have said that scoring system and counting attendance were not transparent. There was halo effect in scoring. Regarding the tools used in semester system they viewed that attendance, project work, group work, mid-term exam, and individual assignment are constructive for them.

Acharya (2016), did research entitle "Attitude of Teacher and Student towards the Letter Grading System in SLC." The objectives of this research were to find the attitude of teachers and students and compare the attitude of teachers and students towards the Letter Grading System in SLC. The researcher used a quantitative method with a survey research design. The sample for this research was taken by simple random sampling. The sample size for this research was 30 teachers and 180 students in the Kathmandu district. The researcher prepared 20 statements for teachers and 30 statements for students with a five-point Likert attitude scale. The collected data were organized, tabulated, analyzed, and interpreted by using statistical tools such as percentage, mean, standard deviation, chi-square test, and t-test using a 0.05 level of significance, and it was concluded that both teachers and students were positive towards the letter grading system in SLC. Teachers are more positive than students in terms of knowledge and practice.

Neupane (2015) conducted research on "Managing continuous assessment system at primary level: Teacher perceptions and practices". Her objectives of the study were to find out the teacher perception towards CAS, to find out the current practices adapted by teachers in CAS and to suggest some pedagogical implication. The population of the study was primary level teachers and sample consisted of forty primary teachers from twenty governments added schools of Lamjung district. Sample was selected by using purposive non random sampling method. Her tools of the data collection were questionnaire and observation checklist. Finally, the findings of the study shows that there is good practice of CAS at primary level that CAS has played vital role to decrease students absent rate reduce the dropout rate, and minimize the number of failures off students. Both students and teachers were found to apply project work, creative and problem-solving activities, demonstration role play group work and communicative competency-based

activities reading assignments practice of using an audio-video and worksheet practice while teaching and learning.

As the above studies reveal many researches have been carried out on formative assessment. These studies were focused on teachers', students' and stakeholders' attitude and their experiences regarding formative assessment in the classroom. During literature review, I found a lot of researches were done on internal assessment, formative assessment and CAS with different aspects. But I didn't find any research done on recently applied compulsory internal assessment in mathematics at secondary level. I found that more studies were not conducted focusing especially on secondary level mathematics. So, through this research I explored students' perception and teachers' experiences towards internal assessment in mathematics at secondary school.

Review of the Theoretical Literature

Review of theoretical literature provides an insight to researcher that is related to a number of aspects that have direct or indirect assistance the research topic. There are various theories related to formative assessment. This research is based on following theories which are related to formative or internal assessment.

Differentiated Instruction and Assessment. Tomlinson (1999) states that the philosophy of differentiation in classroom instruction provides multiple approaches to content, process and product based on students' needs and interests. Under the multiple approaches to the process of differentiated instruction, students' learning assessment is an embedded part. Furthermore, Tomlinson states that the students' assessment is no longer predominantly something that happens at the end of a lesson or session to determine "who got it" more than that

the assessment in Differentiated Instruction is to determine the particular needs of individuals in relation to the unit's goals. Therefore, student's assessment in case of classroom instruction is one of the ongoing processes which have a significant role in students' learning progression. A dedicated teacher can evaluate how ready students are to learn, what they're interested in, and how they learn best by using different types of assessments. Formative assessment is a constructive dimension of students' learning assessment and informative for every stakeholder of instructional program, which designed to follow a student's progress as they attain essential learning outcomes as a unit of study progresses.

This philosophy also summarized that if the different forms of formative assessment; classwork or class discussions or question-answer sessions, homework, project work or performance-based assessment and tests or quizzes are implemented appropriately then the formative assessment can be a powerful tool to improve students' level of confidence, creativity and logical thinking. As mentioned above, about different form of assessment, Curriculum Development Center (CDC) has made same things as the component for the internal assessment. So, philosophy of Differentiation in Classroom instruction is very useful for my research.

Constructivism. Constructivism is all about how people learn by actively engaging with information and experiences. In my study about internal assessment, where teachers observe, guide, and give feedback to students, this theory fits well because it's like a "learning by doing" approach. Constructivist approach to assessment is a formative rather than summative(Thomas, 2023). Researcher will be able to investigate how students learn through these assessments, and how teachers' experiences influence this learning process. So, it's a solid choice for this research. In a constructivist classroom, the teacher has a role in creating a collaborative environment where students are actively involved in their learning(Bastola, 2023).

Social constructivism. Lev S. Vygotsky, a well-known scholar, had a unique view on how people learn. He disagreed with behaviorism and Piaget's constructivism because they didn't give enough importance to the role of society in learning. Vygotsky believed that knowledge is developed through interactions between learners and their society. He saw a classroom as a small society in itself. So, for my research topic, I have chosen to focus on the constructivist (Vygotsky) learning theory. This theory suggests that everyone learns by connecting ideas and creating their understanding. Vygotsky emphasized that when we assess what people have learned, we're always within a learning environment, like a classroom. By observing and motivating students in the classroom and keeping records, we gain the information needed to make decisions that support their learning

In constructivist theory assessment is viewed as a part of the learning process in which students play a greater role in judging their own progress. Learners are active participants in their learning process, knowledge is constructed based on experiences. According Differentiated Instruction and Assessment theory the purpose of assessment is to determine the particular needs of individuals in relation to the unit's goals. Therefore, student's assessment in case of classroom instruction should be an ongoing process that helps to compare the practices of students and engagement for formative assessment.

In my research I intends to find weather the finding of the theory is similar in the context of Nepalese school system or not. So, the norms of above-mentioned theories support to evaluate the perception and practice of students and teacher towards internal assessment as formative evaluation. After the analysis of qualitative and quantitative data collected from teachers and students above mentioned theories supports for the triangulation of finding and to make the correct decision of this study.

Conceptual Framework

The graphical representation of all the activities done in the journey of research work is known as conceptual framework. It is also the roadmap of the research. The conceptual framework of this research study has been mentioned below.

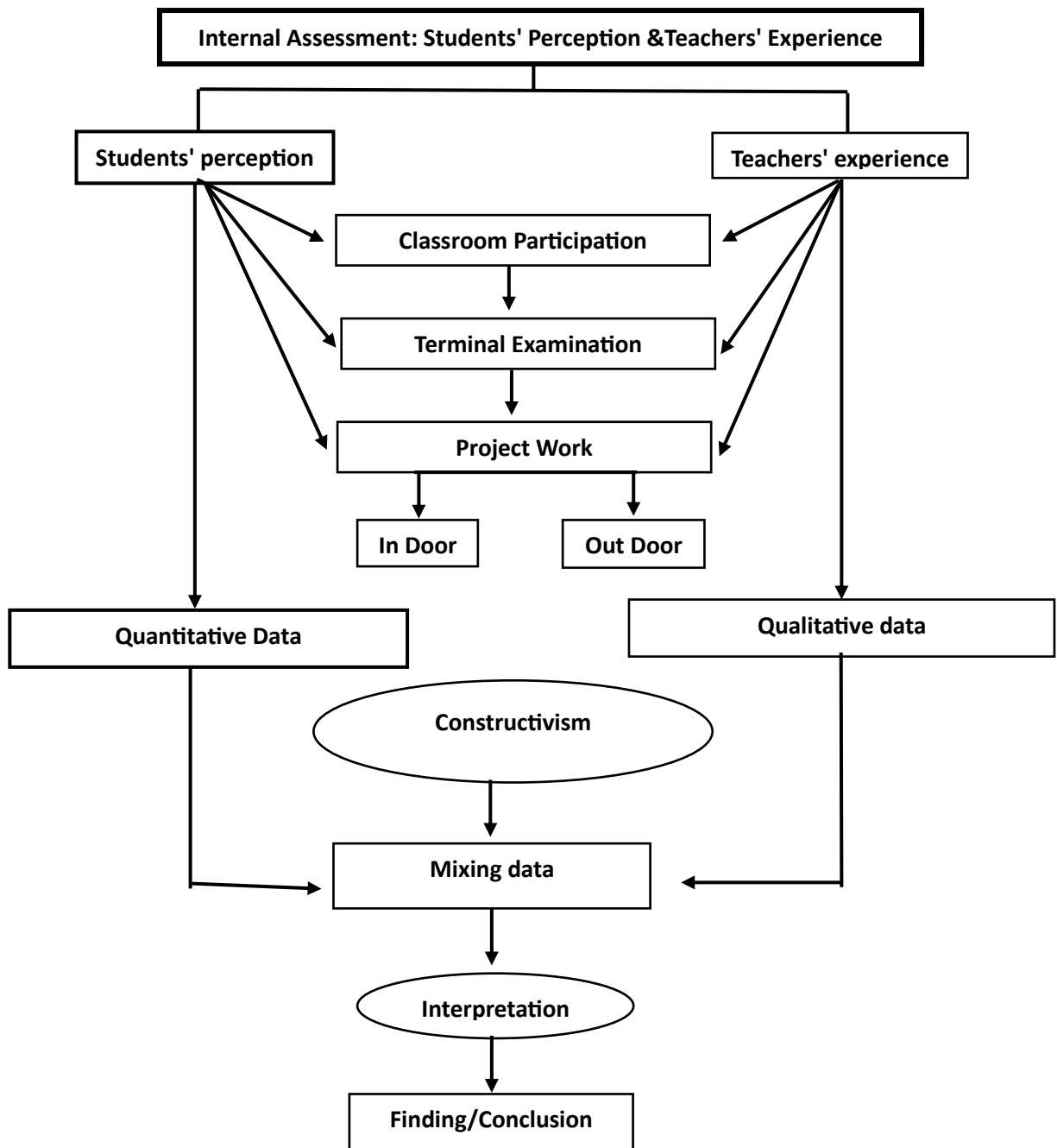


Figure. 1 *Conceptual Framework*

This conceptual framework specially has two fields that are students' perception and teacher experience. From both sides mainly information was collected on the basis of classroom participation, terminal examinations and project works. Under the theme classroom participation attendance files, teacher's dairy, project work record file and other related materials were taken as supportive materials and conversation with students and teachers were the sources of information. According to the current provision, two terminal examinations are compulsory in this concern current practice in school was observed. Teachers' practice and experiences was collected and students' perceptions about project works has been asked.

Quantitative primary data was collected from students' sides and qualitative data was obtained from teachers' sides. Collected data were mixed and compared with theoretical principles. Data was analyzed and interpretated to get conclusions.

Chapter III

Methods and Procedures

Research methodology is like a roadmap for figuring out how to do research. It's all about the organized and scientific way that researchers go about their work. This chapter covers design of the study, population of the study, the sample and sampling of the study, data collection tools and technique, their reliability and validity, data collection procedures, methods for analyzing and interpreting the data, and ethical considerations.

Design of the Study

Research design refers to the overall framework, logical strategy and organized plan that guides the direction of a research study. There are various research designs like qualitative, quantitative and mixed method. Among these designs, I followed the mixed method research design in this study. According to Bastola (2023), mixed-method research is like a bridge between two different ways of doing research - one with words and stories and the other with numbers and data. It helps researchers in the real world by letting them learn from both of these methods and create more practical techniques. A mixed-methods design allows researchers to validate one set of data to another one, providing a platform to compare data or to answer various types of question (Creswell and Clark 2017). Due to large sample, quantitative data can be superficial and qualitative data may not be generalized due to small sample. So, to find the in-depth data I followed mix method (Quan + Qual) design in this study.

Population of the Study

The population of this study was the secondary level Mathematics teachers and their students of Banke district.

Sample and Sampling of the Study

According to Khanal (2078, p.61) "Sample is the representative proportion of the population and Sampling is the process through which a relatively small number of individuals, objects or events is selected and analyzed to find out something about the entire population". The basic objective of any sampling design is to reduce the size of the population to a manageable level, considering factors like cost, resources, time, the researcher's abilities, and the difference between the sample data and the values in the whole study population.

Since, this research is a small-scale study, it is tough to collect data from each and every member of the population. There are 108 secondary level community schools in Banke district, out of them four schools were selected randomly. Then from these selected school, four secondary level mathematics teachers and 169 students of grade X in the academic year 2080/81 were taken as the respondents for this research.

Data Collection Tools and Techniques

Gathering data is a crucial aspect of this research. Various instruments or tools are available to collect the data from the chosen sample. In this research, I collected primary data related to internal assessment at secondary level by using following tools.

Survey questionnaire. There are four types of attitude scales, among them the Likert Scales and Thurston scales are mainly used in educational research (Niure, 2018, p. 122). To find the perception of students Likert attitude scale was used in this study. On this scale, every statement has five options: strongly agree, agree, neutral, disagree and strongly disagree. For all five options, assign different numerical values. For a favorable statement, the numbers 5, 4, 3, 2, 1 correspond to strongly agree (SA), agree (A), undecided (U), disagree (D), and strongly

disagree (SD), respectively. But for the unfavorable statement, assign the reversed numerical value, i.e., 1, 2, 3, 4, and 5, for SA, A, U, D, and SD, respectively (Khanal, 2078). I had developed questionnaires about internal assessment using five-point Likert's scale to find the perception of students. Survey questionnaire consisted different 40 statements and these were also divided into four categories such as classroom participation, terminal examination, project work and overall view of internal assessment.

Interview guideline. Interviewing is a data collection procedure involving verbal communication between the researcher and respondent either by telephone or in a face-to-face situation (Khanal, 2078). A semi-structured interview guideline was used to collect the experiences of teachers towards the practices of internal assessment at secondary level.

Reliability of tools. To ensure the reliability of data collection tools(questionnaire) I used Cronbach's Alpha technique. A pilot study was carried out among eight students to assess the reliability of these tools. Each response given by the respondents of pilot study were entered in SPSS and evaluated. Calculated value of reliability coefficient was 0.863 which indicates very high correlation.

Validity of tools. For the validation process of attitude scale form and interview guideline, I used expert judgment method. I visited two Ph.D. scholar experts to validate tools. Tools were modified under the guideline of supervisor and expert.

Data Collection Procedures

For the data collection, I had guidelines for interview and a set of questionnaires for the teacher and students respectively. Then I went to the selected schools and talked to the authority and explained the purpose and process of the research. Then I requested them to get his/ her

permission to carry out the research. I met with mathematics teachers and secondary level students, explained the purpose of my research and stress the importance of their assistance. I had conducted in-depth interviews with teachers and I distributed the questionnaire to the students. I requested them to write the answer without any fear and hesitation. I have recorded important information from these interviews and discussions in audio formats and I kept field notes. Finally, after collecting the data I thanked them heartily.

Data Analysis Procedure

The quantitative data collected from the survey questionnaires with students was analyzed using Statistical Package for Social Sciences (SPSS). Statistical tools mean and Chi-square test at a significance level of 0.05 was used to analyze the data. The weighted mean utilized to determine the average perception of students regarding each statement, while the Chi-square value indicate the significance and direction (positive or negative) of students' perceptions toward each statement within the internal assessment system.

Similarly, qualitative data obtained from interviews was in the form of audio record. This audio record was transcribed and then translated into English language. The qualitative data was divided into four categories such as classroom participation, terminal examination, project works and overall review of internal assessment. The qualitative data was analyzed and discussed in relation to above categories. I triangulated it with theoretical foundations. Similarly, I harmonized this information with key theories and identified their results. I have maintained high standards for the quality of the information analysis process and validated the research findings. Similarly, I used the general deductive method developed by Thomas (Thomas, 2006) as my approach for analyzing the information.

Ethical Consideration

Ethical consideration is one of the important parts of research. While conducting this research, I was aware of some ethical issues that can be appeared in the journey of research work. All the information provided by the participants was kept in privacy and pseudonyms was used for their confidentiality and making them more comfortable giving interviews. I didn't use the data provided by the participants for other reason and purpose none other than my research work. I tried to maintain the privacy, trustworthiness, objectivity and credibility in my research by giving proper credit to the authors, scholars and researchers' work to abort the risk of plagiarism in my research study.

Chapter IV

Analysis and Interpretations of Data

In this chapter, numerical and non-numerical primary data collected through questionnaire and interview are analyzed and interpreted meaningfully. The quantitative data collected using questionnaire regarding the perception of Students towards the practice of internal assessment system at secondary level were tabulated and analyzed using SPSS and Excel. Similarly, qualitative data collected through interview with secondary level mathematics teachers regarding their experiences about implementation of current internal assessment system were analyzed with a thematic approach. Data has been analyzed under 4 different categories i.e. Classroom Participation, Terminal Examination, Project work and over all perception towards internal assessment.

To find the perception of secondary level students, 169 students of grade X from four secondary schools were participated. Questionnaire used for the collection of quantitative data consists 40 items. Frequency percentage, weighted mean and chi-square test of quantitative data were calculated by using SPSS. Meanwhile four secondary level mathematics teachers were interviewed on the basis of an interview guideline regarding their experience of internal assessment. Qualitative data collected through interview also analyzed under the same four categories as above.

Classroom Participation

In class, when students speak up, ask questions, and join discussions, it's called classroom participation. Classroom participation plays a pivotal role in internal assessment, serving as a dynamic indicator of students' engagement, comprehension, and application of course material.

The perceptions of students and experiences of teachers about the classroom participation is presented below.

Table 4.1

Students' perceptions on Classroom Participation

Items	SA (%)	A (%)	N (%)	D (%)	SD (%)	Weighted Mean	χ^2	Decision
1 I am being regularly present in the classroom due to internal assessment	26.6	33.7	32.5	5.9	1.2	3.78	79.6	Positive
2 Classroom Participation is an important criterion for internal assessment.	50.3	40.2	8.3	1.2	-	4.39	116.18	Positive
3 I got opportunities in the classroom to show my participation and skill.	50.9	34.9	8.9	4.7	0.6	4.3	161.38	Positive
4 Classroom Participation also help me to develop the presentation skills	41.4	49.7	4.7	3.6	0.6	4.27	187.71	Positive
5 I try to do something new on my project presentation	30.8	30.8	33.7	3	1.8	3.85	88.13	Positive
6 Presentation is less effective in mathematics class	13.6	23.1	19.5	34.3	9.5	3.02	30.97	Negative

	comparing with other subjects due to nature of content.								
7	I started to learn mathematics conceptually since this type of practices.	20.1	55	12.4	8.3	4.1	3.78	141.38	Positive
8	Our teachers encourage and provide support for active participation and presentation in the class.	61.5	29.6	6.5	1.8	0.6	4.49	228.84	Positive
9	It takes long time to get individual response from our teachers	28.4	43.8	14.8	12.4	0.6	2.13	92.74	Positive
10	Regular participation in the class is an important component for internal assessment that helps for good result in summative assessment.	34.9	52.1	5.9	1.2	5.9	4.08	169.13	Positive
11	We got opportunities to explore and develop the new mathematical knowledge and skills.	48.5	31.4	10.1	4.1	5.9	4.12	126	Positive

<p>12 The active participations of students in the class help to generalize abstract concept of mathematics and improve achievement.</p>	<p>60.4 30.2 6.5 0.6 2.4 4.45 219.84 Positive</p>
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SA= Strongly Agree, A= Agree, U= Undecided, N= Neutral, SD= Strongly Disagree and χ^2 - test on .05 level of significance with 4 degrees of freedom. ($\chi^2_{0.05, 4} = 9.49$) Weighted mean = 3.8950

In the above Table 4.1, there are 12 different statements related to classroom participation. The weighted mean of these 12 items is 3.89 which is greater than 3. It shows that students perceived classroom participation positively in the process of internal assessment. The statement “I am being regularly present in the classroom due to internal assessment” has mean 3.78 which is positive and 60.3 % students agreed with this statement. It means internal assessment increases regularity of the students. In the same context, teachers also shared their experiences as internal assessment reduced the irregularity of students in the classroom. The calculated value of chi-square ($79.6 > 9.49$) shows that the statement is significant. This data shows that classroom participation as a component of internal assessment play the important role to increase the regularity of students in the classroom. Similarly, the statement “Classroom Participation is an important criterion for internal assessment” has mean score 4.39 which is also greater than neutral mean so it is positive. 50.3% and 40.2 % students responded strongly agree and agree respectively means 90.5% perceived positively. Supporting this quantitative data one of my teacher participants T₁ said that “*classroom participation is important component for internal assessment and it should take a permanent place because it makes students more*

discipline". This data indicates that internal assessment plays the important role to improve students learning and discipline. So, the internal assessment in mathematics looked effective for regularity. The chi – square value is $116.18 > 9.49$ so the statement is significance.

The statement "I got opportunities in the classroom to show my participation and skill" has mean value 4.3 and in total 85.8% students agreed with it. Due to internal assessment students get more opportunities in the class to prove and improve their knowledge, skills etc. The calculated chi-square value is $161.38 > 9.49$ so the statement is also significance. More opportunities to expose in the classroom mean a lots for the students to make their learning interesting, meaningful and permanent. So, teachers have to create more opportunities for the active participation of students. The statement "Classroom Participation also help me to develop the presentation skills" has the mean 4.27 which is more than the aggregate mean (3.89) so it shows that students' perception is positive. 41.4 % students strongly agreed and 49.7 % students agreed with this statement. The calculated chi – square value for this item is 187.71 which is more than the chi – square table value so the statement is significance. Under the classroom participation 61.6% students agreed to the statement "I try to do something new on my project presentation" but 33.7 % students have responded neutral so it shows that still some of the students are not interested and can't show their innovation in the classroom. Whereas this statement has mean 3.85 which is positive and the chi – square value is $88.13 > 9.94$ so its significance.

The statement "Presentation is less effective in mathematics class comparing with other subjects due to nature of content" has mean 3.02 which is closely equal to neutral mean. 9.5% students strongly disagreed to this statement and 34.3 % are disagreed but 36.7 % are agreed to the statement. It shows that classroom presentation can make effective in mathematics as like

other subjects. Similarly, the statement “I started to learn mathematics conceptually since this type of practices” has mean 3.78 which is positive and more than 75% students agreed to this statement. It shows that most of the students are learning mathematics more conceptually due to internal assessment. In this regard, teacher participants T₂ also shared that *after being regular presence in the class students have learned at least basic concept of mathematics and shown the interest to learn abstract mathematical knowledge*. Mathematics was being tough challenging for some students due to lack of basic knowledge of mathematics but internal assessment looked beneficial for those who didn't understand the abstract concept of mathematics. The chi – square value $141.38 > 9.49$ is significant but 12.4 % students disagreed means still some of the students are not getting mathematics how they want to learn.

The statement “Our teachers encourage and provide support for active participation and presentation in the class” has mean score 4.49 which means students' perception to this statement is positive. 61.5 % of the students are strongly agreed with it. It shows that mathematics teachers encourage every student for their betterment. Only 4 students disagreed with this statement means almost all students are being encouraged with their teachers' activities. But data from teacher participations also shows that still they are struggling to motives some students because of delay in submitting assignments, cheating and passiveness in group works. Similarly, the chi – square value ($228.84 > 9.49$) is also significant. Another statement “It takes long time to get individual response from our teachers” has mean score 2.13 which is negative. More than 70% of the students agreed with it shows that students are not getting individual quick feedback of their performances. From this data I concluded that large number of students in a classroom, multiple diversities, interest and capability of teacher are the reason for not getting the quick and

individual feedbacks. The chi – square value ($92.74 > 9.49$) ensures the significant of this statement.

Similarly, the statement “Regular participation in the class is an important component for internal assessment that helps for good result in summative assessment” has mean value 4.08 is greater than aggregate mean (i.e. 3.89) so it shows that students perceived it positively. This data shows that internal assessment is not only for learning, students get its benefit in summative assessment as well. 87% of the students agreed with this statement. Most of the students’ perception looks like internal assessment as just for higher grade than quality learning. The calculated chi – square value ($169.13 > 9.49$) is also significant. The statement “We got opportunities to explore and develop the new mathematical knowledge and skills” has mean 4.12 which is also positive. Majority of the students agreed to this statement and chi – square value ($126 > 9.49$) is also significant. Another statement “The active participations of students in the class help to generalize abstract concept of mathematics and improve achievement” has positive mean (i.e. 4.45) and chi – square value ($219.84 > 9.49$) is also significant. More than 90 % of the students agreed to this statement. It shows that regular participation of student makes them able to learn at least basic concept of every topic so this lids students to understand the abstract concept of the mathematics as well as helps to improve the achievement of students.

In this concern, the experiences of teachers were collected by the interview with participant teachers and found that found that Classroom participation is good for learning and it should take a permanent place in the internal assessment system. All the respondents’ view was classroom participation is very important. Specially, they used attendance record as the main component under the classroom participation. When I asked what tools and ideas do you used to evaluate the student’s participation in the classroom? then three of the total respondents said that

“I used attendance record only” but participant teacher T₂ said that “I have given marks under this theme according to regularity, classwork, homework, interaction with teacher and students etc.” so we can say that most of the teachers have not followed the proper provision of internal assessment. Their practices were just to provide the grade for the students according to regularity of the students. For the regularity of students in the classroom teacher also have done coordination with parents about students’ participation. In this concern T₄ shared his experience that Interaction with students and parents made improvement in students learning and output. Similarly, T₃ mentioned as

Our students used to bunk the classes after reading 3rd / 4th period then we started taking attendance in first and last period every day. This practice makes them compulsory to stay in the school till the last period. We made letter compulsory before being absence in the class again they used to send the letter making different kinds of false pretenses. Now letter and parents call are mandatory so students rarely miss the classes.

From the above view of the teacher what I concluded that implementation of internal assessment in mathematics makes teacher, students and parents more responsible but due to lack of ideas, skills and supervision with support their practices are just regularity oriented instead of classroom participation. Students are not being engaged in learning activities by their interest. T₃ said that Students got self-motivation when they got opportunity and become success even in a single task and automatically, they became active in others activities. This narrative of teachers also concluded that students want group wise competition rather than individual and also gives good result. If group leader is good then other members of this group also done good job. In my similarly concern another teacher T₁ said that

Students used to be more absence before this provision but after this provision maximum students are regular in the classroom so all of the students are able to learn at least minimum/basic knowledge in every chapter. Also, I didn't care who is presence or not previously but now a days I take care of every student's presence in the classroom.

It shows that all teachers were aware of their students' presence in the classroom. It was also found that teacher have worked a lot to minimize the number of absence students in the classroom. All the teachers shared that students' regularity in the classroom is consistent due to inclusion of classroom participation in internal assessment. When I asked 'how you used ICT to increase students' active participation in the classroom? The T₄ said that "in our school there is not any equipment and infrastructures to use ICT in the classroom but I have made the messenger group of students to facilitate them. Mostly they asked questions in exam time and sometime in other days too". Also, he added due to financial and other family problems some students of our school go to India with their parents to work there after being admit in the school and comes after long time. They also want to participant in the exam at that time policy wise they cannot participate in the final exams. They only attended 30% to 40% of total classes but as their level we provide internal marks. Regarding this, T₃ illustrated that "Students often complain that there are such problems at home but I am presence only for attendance". According to this data I concluded that many students of public schools are belongs from poor family background so they have to support their family along their study.

The narrative of my participant T₃ informed about students' trend in her school as students from remote areas comes in the school and read as a regular student for long time but finally, they go to their village and participate in the exam from another school of their village. That means students read in one school and participate in the examination from another school.

The school from where they participate in the examination provides internal marks without coordinating the previous schools. This data indicates that some schools have given internal assessment without following proper criterions.

Regarding teachers' challenges under classroom participation, it was found that Time management, group division, classroom space, availability and arrangement of desk bench etc. are challenges for teacher. The similar challenges were also found by Pradhan (2021). He further mentioned that unmanaged number of students in a class and overloaded curricula might hinder the successful implementation of AFL strategies. The similar concern was shown by the teacher participant T₁ as he mentions that it is quite new practice in mathematics so it is difficult to keep record of every activity also make more complicated due to letter grading system. Teachers were not very strict for some students because of occasional function and health problem of students. This view is supported by the narrative of my teacher participant T₄ "*Sometimes obedient students become absence due to long sickness, injuries, by their rituals etc. but they covered missed classes themselves so it becomes confusion what to do how to provide grade etc.*" Teachers faced such types of problem and they were not able to settle this problem because they have taken attendance record as the main things for the classroom participation. One of the respondents said that by nature some students don't want to be exposed them, many times he has requested them to ask if not understood but they did not ask and behaved as just a listener.

According to differentiated instruction and assessment theory classroom participation as a component of internal assessment should be an ongoing process which have a significant role in students' learning progression. During research it was found that teachers mainly used the record of students' attendance and forced students for regular presence in the classroom. Students also found positive for the classroom participation. Curriculum has specified proper guideline of

internal assessment so teacher need to be updated and follow the guideline. It is found that teachers need different diversity management skills otherwise they cannot make equal participation of students in the classroom

Terminal Examination

To conduct the terminal examination teacher needs to prepare exams question paper based on syllabus and learning objective. These tests cover different topics and can include writing, practical tasks, or presentations. Teachers have to monitor students to prevent cheating in the examination. Teacher may conduct a review session to discuss the exam results, address any common misconceptions or areas of difficulty, and provide additional clarification or guidance to help students improve their understanding of the material. The perception of students and experiences of teachers about terminal examination is presented below.

Table 4.2

Students' perceptions on Terminal Examination

Items	SA (%)	A (%)	N (%)	D (%)	SD (%)	Weighted Mean	χ^2	Decision
1 Terminal examinations are helpful for the effective learning and self-realization.	59.8	36.1	1.8	1.2	1.2	4.52	243.39	Positive
2 The maximum number of terminal examinations requires for better result and improvement.	40.2	45	4.7	6.5	3.6	4.11	145.23	Positive
3 Terminal examination develop the confidence of students for final examination	66.9	23.1	7.7	1.2	1.2	4.5	259.01	Positive
4 Result of term exam demotivate the students	26.6	44.4	10.7	11.8	6.5	2.27	82.33	Positive

	who got poor marks on mathematics regularly								
5	Immediate feedback after term exam is more beneficial to solve the weaknesses.	62.1	31.4	5.3	-	1.2	4.53	160.44	Positive
6	More than two term exams are needed for making internal assessment better and transparent.	21.3	46.2	26	1.8	4.7	3.77	108.78	Positive
7	In the sense of term exam, we got more revision opportunity.	48.5	42	3.6	3.6	2.4	4.30	181.68	Positive
8	More internal exams give pressure time and again for students.	29.6	42	18.3	4.7	5.3	2.14	86.82	Positive

SA= Strongly Agree, A= Agree, U= Undecided, N= Neutral, SD= Strongly Disagree and χ^2 - test on .05 level of significance with 4 degrees of freedom. ($\chi^2_{0.05, 4} = 9.49$) aggregate mean = 3.77

There are 8 different statements related with terminal examination and the weighted mean of all these statements is 3.77. It shows that students' perception towards terminal examination as a component of the internal assessment is positive. The chi – square value of all these statement is greater than 9.49 so all the statements are significant. The table 4.2 shows that 59.8 % of the students strongly agreed to the statement “Terminal examinations are helpful for the effective learning and self-realization”. The mean score (i.e. 4.52) is positive and this mean is supported by calculated chi – square value ($243.39 > 9.49$) is significant. Out of 169 students, 162 students agreed that terminal examination is necessary and effective for self – realization. Regarding another statement “The maximum number of terminal examinations requires for better result and improvement” has mean score 4.11 which shows that students' perception toward terminal examination is positive. Only 10.1% of the students disagreed to this statement so majority of the

students are interested for maximum number of terminal exams. 40.2% of the students strongly agreed with this item and chi – square value is 145.23 which is significant. Supporting this quantitative data teacher participant T₂ shared his experience as “*the habit of reading focusing only some chapter has been improved and students realized their mistakes and were able to improve it next time*”. From this data I concluded that terminal examination is an important tool of assessment for learning. Terminal examinations lead students to study all the content that they used to read selected chapters only.

The third statement of the table 4.2 “Terminal examination develop the confidence of students for final examination” has mean 4.5 which is very positive. For this statement 66.9 % strongly agreed and 23.1 % agreed it shows that terminal examinations developed the confidence of the students by removing the fair of examination. This ensure that terminal examination is one of major aspect of internal assessment which is supported by chi – square value ($259.01 > 9.49$) is significant. Another statement “Result of term exam demotivate the students who got poor marks on mathematics regularly” has mean score 2.27 is less than 3 so students believed that some students can be demotivated due to lower scores in multiple attempts. This data shows that terminal examination is necessary component of internal assessment but students can be demotivated by lower score so teacher should concern them specially also have to give immediate feedback. The result of fourth statement is also supported by another statement “Immediate feedback after term exam is more beneficial to solve the weaknesses” which has mean value 4.53. Regarding this statement 62.1 % of the students strongly agreed and only 1.2% of the students disagreed. So, all the students believed that immediate feedback after any examinations is beneficial to work on their weaknesses. Chi - square value (i.e. $160.44 > 9.49$) of this statement also significant.

The table 4.2 shows that majority of the students (i.e. 67.5 %) agreed that more than two term examinations are needed for making internal assessment better and transparent. This statement has mean score 3.77 which is positive. But 26 % of the students' perception is neutral and 6.5 % of the students disagreed to this statement. In this context one of my teacher participants T₃ said that they tried for multiple terminal examinations but was not effective. This data shows that some of the students shown interest for more than two term examination but teachers haven't good experiences of conducting more exams. From here I concluded that terminal examination is a part of internal assessment but could not sufficient for the overall leaning assessment. Similarly, 90.5 % of the students are agreed that they got more revision opportunity due to terminal examination. This seventh item of the table 4.2 has mean 4.30 which is positive and chi – square value (i.e. 181.68 > 9.49) is also significant. According to this data I concluded that terminal examination also helps to make learning permanent by providing revision opportunities. Last statement of the terminal examination “More internal exams give pressure time and again for students” has mean 2.14 which is below the neutral value so it indicates that students get pressure due to terminal examination. Students has taken every terminal examination as summative examination also they are affair of term exams results. So, teacher have to consult with students that terminal examinations are assessment for learning not only to assess the learning to reduce the pressure of students. The individual feedbacks for the needy students is necessary to improve their achievement which is the beauty of terminal exams.

Regarding terminal examination teachers' experiences was collected through interview and it was found that compulsorily 2 terminal examinations were carried out to provide the grade as per the provision of current internal assessment system. But they have also conducted different kinds of examination for learning. In this context T₃ said that *two terminal examinations were*

conducted formally in the interval of 3/3 months. For these two examinations question papers were prepared by municipality. But we have also conducted other examination in different time.

This view of teacher participant shows that as per the curriculum all the schools have carried out two terminal examinations. It was also found that local government and other concerned authorities supports schools for the conduction of terminal examination and works for the uniformity in every schools. All the teachers shared that they have got opportunities to know the students' weakness and mistakes in the exams and agreed that they have given feedback accordingly. The teachers were agreed that students have taken terminal examination equally as final exams. Some good impact of terminal examination which is shared by all teachers are students became serious on their study due to terminal examination. Terminal examination helped to develop the confidence of students and also consolidated the knowledge. In this regards T₂ states:

Specially SEE students used to emphasize on the final exam without considering the internal exams, but now students give equal importance to all the exams. Due to this provision, the habit of reading focusing only some chapter has been improved and the habit of reading all chapters has been developed.

The above view of teacher indicates that terminal examination is developing good habit to the students which is supported by quantitative data as more than 90 % of the students positively agreed for the statement terminal examination are helpful for effective learning and self- realization. From this qualitative and quantitative data, I concluded that as much they prioritized, focused, disciplined and followed the provision this much positive result can be obtained. Terminal examinations provide exposer to improve students learning. Terminal examinations were found to have a positive impact on students' study habits and attitudes

towards exams. Students now give equal importance to both internal and final exams, leading to improved focus on all chapters of the curriculum. Teachers also mentioned that some of the students did not read the question carefully made mistakes. In some case students used wrong formula, calculation mistakes also appeared but students thought they had done correct and optimistic for good marks. In this regards T₃ illustrated as *“Some students complain that they have solved all the questions in the exam but why they got few marks. After the exam, when they were given feedback with their answer sheet then they realized their mistakes and were able to improve it next time”*. This shows that terminal examinations are good opportunities for students to know their mistakes as well as teachers to work on it. All the teachers are agreed that feedbacks after examination works very effectively for the students to improvised their drawbacks.

It's very difficult to judge students' understanding and skills only according to the result of the examination. Sometime examination result is affected by extraneous factors. Teacher and students are equally responsible for the improvement of skills and execute the plan. In this concern my teacher participant T₃ shared his experiences as

Even the students who did well in the class were afraid that they would not get good results in the exams so from the end of Poush, we conducted continuous exam of class 10 students every Friday and Saturday. Students were actively engaged and well – prepared for the first, second exam. But later we stopped the examination as students shown low interest

The above experiences of teacher informed that just two terminal examinations were taken importantly for internal assessment marks but not this much teacher has taken other examination as per requirement and situation. Other than two terminal examinations were not

recorded for internal assessment. This data shows that except first two terminal examination other examination were conducted only to obtained good result in final examination. In this concern to improve result we should not force students to participate in maximum number of examinations that will not the perfect idea because students feel more pressure and that kills their interest. So properly conducted 2/3 examinations and appropriate individual feedbacks for students after examination can improved the students' learning. It was found that teachers have been given oral feedback for whole class only by taking common mistakes of students. This result is supported by the response of T₂ as he expressed "There are many students in a classroom so it is not possible to give individual feedback in the classroom. I have given feedback to whole class at once". From the experiences shared by teacher participants what I concluded that only oral group feedbacks are not sufficient for students so teachers have to focus on individuals feedbacks.

During this research it was also found that some students always got low score even though they did not pass the exams. Teachers tried different methods especially for weak students and other. When I asked how do you motivate your students after examination? My teacher participant T₃ answered as *in order to motivate the students, we gave grade sheets according to the result of each exam and also awarded the first, second and third place winners.* This data shows that only taking examination and providing grades as summative examination is not suitable for the internal assessment. In the process of internal assessment terminal examinations should encourage students for more learning. Teachers should motivate weak students that can improve their learning. But above view of teacher participants shows that some students are very poor and regularly they failed in the examination so they need special remedial treatment from the teachers but they are just providing grade sheet and awarding top performs of

the examinations. Such types of practices cannot include these needy students so what I concluded that teachers need to create favorable environment in the classroom from where all students can learn in their own pace. Should encourage and guide weak students as well.

Teachers also expressed their difficulties regarding terminal examination. The major difficulties were constructing question paper according to specific grade and measurement of answer sheet. In this regard teacher participant T₄ expressed as

I have some confusion to prepare the question paper in the current format. In previous format there would be very short, short, long and very long answer question separately so it was easy to check the copy. In recent format, knowledge level, understanding level, application level and higher application-level question mixed in a question so it takes long time to check the answer sheet.

In the similar concern T₃ said that “*theoretically I read bloom taxonomy but still I have confusion to set the questions paper with correct level of question but I have taken help from the internet and set books while preparing the question paper for the exam*”. This data shows that teachers were habitual on previous question pattern and now adapting new patterns looks a bit challenging for teachers. In this context it is found that teachers have made question paper taking help from textbook, internet and set books. From this narrative of teacher participants I concluded that for the proper implementation of terminal examination, teachers need training about construction of question paper and item analysis. Similarly, when I asked have you faced any difficulties in the question prepared by municipality? In my concern the T₄ mentioned that

I have been consistently recommending to create question paper with a full score of 75, believing it would enhance quality. But only question papers with a full score of 50 are

provided from municipality. There were many mistakes in the question paper received from municipality, which makes it difficult for both students and teachers during exams.

This data shows that the tools used by teachers for internal assessment had lack of reliability and validity. Although the teachers conducted the examination by preparing the question paper, they are feeling difficult to prepare the question paper as per specific gride. From this data I concluded that there is lack of curriculum dissemination in ground level. For the effective implementation of all the components of internal assessment, teachers should be capable. Above data shows that teachers are not professionally capable for this provision so teachers professional development programs are the first need of teachers.

Project Work

Project works involve activities such as conducting surveys, analyzing data, creating mathematical models, or solving complex problems. The perceptions of students and experiences of teachers about the project work is presented below.

Table 4.3

Students' response towards Project Work

Items	SA (%)	A (%)	N (%)	D (%)	SD (%)	Mean	χ^2	Decision
1 The project work inspires talented students and offers special help for less talented one.	52.7	32	10.1	1.8	3.6	4.28	161.5	Positive
2 Project work is important and effective component for internal assessment.	26	58.6	11.2	2.4	1.8	4.04	189.66	Positive

3	Project work in mathematics gives unnecessary burden for students.	10.7	20.7	29	24.3	15.4	3.13	17.59	Negative
4	It is not suitable to give project work for all units of mathematics especially content area.	21.9	30.2	22.5	18.9	6.5	2.57	25.05	Positive
5	There are all necessary materials and infrastructures for mathematics project presentation in our school.	3.6	8.3	30.2	14.8	43.2	2.14	90.97	Negative
6	Project work as the major component of internal assessment is not appropriate for mathematics subjects.	7.7	37.9	23.1	20.1	11.2	3.10	47.06	Positive
7	There is biasness to assign the grade of project works.	20.1	36.7	18.3	13.6	11.2	2.59	33.69	Positive
8	Project work on mathematics helps to link with our daily life activities.	24.9	52.7	10.1	7.7	4.7	3.85	132.98	Positive
9	Only indoor projects are possible for internal assessment in mathematics	11.2	14.2	22.5	35.5	16.6	2.68	31.14	Positive
10	Outdoor project works are not possible for all students and all subjects.	25.4	26.6	16	10.7	21.3	2.75	15.11	Positive

11	Project work helps to make learning permanent.	53.8	27.2	10.1	2.4	6.5	4.19	151.2	Positive
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SA= Strongly Agree, A= Agree, U= Undecided, N= Neutral, SD= Strongly Disagree and χ^2 - test on 0.05 level of significance with 4 degrees of freedom. ($\chi^2_{0.05, 4} = 9.49$), aggregate mean 3.21

Table 4.3 consists of 11 different items related to project work and weighted mean of these eleven statements is 3.21 which shows that students are positive with the project work in mathematics for the internal assessment. The chi -square value of all these statements is greater than 9.49 so the all statements are significant. The first statement of the table 4.3 “The project work inspires talented students and offers special help for less talented one” has mean score of 4.28 and significantly positive with chi – square value $161.5 > 9.49$. According to this data we can say project work is good for talent and weak students too. Particularly for this statement 52.7 % of students strongly agreed and 32 % of the students also agreed means more than 80% of students have been inspired by project work in mathematics. Only 5.4 % of the students disagreed with this statement and 10.1 % of the students are neutral this is because of still some students are not convinced and not getting the importance of project work. In the same context, teacher participant T₂ also shared his experiences which support the above result as “*students become more curious to learn and shown the active participation also sometimes weak students have done project works better than the talented students*”. Both quantitative and qualitative data shows that project works for the internal assessment in mathematics really helped to learn the wider mathematical knowledge and skills. Similarly, the statement “Project work is important and effective component for internal assessment” has mean score 4.04 which is positive. This indicate that students perceived positively to the project work as an important component for the internal assessment. 26 % of students strongly agreed and 58.6 % of students agreed with this statement. Whereas 4.2 % of the students disagreed and 11.2 % of students are undecided with

this statement. This result shows that project work is an effective component which can easily find out the level of students' knowledge, skills, strengths and weakness for the further treatment also indicates that some of the students are not satisfied with project work. This statement is also significant with chi – square value 189.66.

According to the table 4.3, the statement “Project work in mathematics gives unnecessary burden for students” has mean score 3.13 which is positive for the statement but not good for the students. This shows that 10.7 % of students strongly agreed and 20.7 % of the students agreed means more than 30 % of students perceived project work as burden for them. From this data I concluded that projects works were not student friendly or students are not getting proper support from teacher and their mates so they have taken as burden. Also 29 % of students are neutral for this statement indicates that some students are not properly engaged in project work. Only 39.7 % of the students are taking project work interesting and perform effectively.

Another statement “It is not suitable to give project work for all units of mathematics especially content area” has mean score 2.57 which is negative. It is negative statement but more than 50 % (i.e. 52.1%) of students agreed with this statement shows that they are not doing project work in each unit. They don't follow the curriculum as well as text book because sample project work and related questions are mentioned at the end of each unit. Like as in previous statement here is also 29 % neutral response that means there is not proper understanding of project work. Only 25.4 % of students disagreed these statements indicates that less than one third part of the students are doing project works as per the provision. The chi – square value (i.e. $25.05 > 9.49$) for this statement is significant. About project works in all chapter, teacher participants also accepted that they couldn't conduct projects in each chapter due to lack of infrastructure, skills, over work load for teachers. In this regard one of my teacher participants T₁

state that “*In the present situation it is not possible to conduct and assign the project work in each chapter*”. This narrative indicates that project works under the process of internal assessment have not done properly enough. Just one – two projects were conducted for the formality and teachers provided marks for students but teachers were not using project work as a formative assessment on the regular basis.

Similarly, the statement “There are all necessary materials and infrastructures for mathematics project presentation in our school” has mean score of 2.14 which is less than neutral value so it is negative for this statement. Only 11.9 % of students agreed this statement indicates that there is lack of materials and resources to conduct the required project works. Out of 169 students 73 students (i.e. 43.2%) strongly disagreed and 14.8% of students disagreed to this statement. This result shows that majority of the students are deprived to perform the project work properly due to lack materials. Also 30.2% of students’ response is neutral because they don’t know the required and available resources for their project work. The calculated chi – square value (i.e. $90.97 > 9.49$) is significant. Another statement “Project work as the major component of internal assessment is not appropriate for mathematics subjects” has mean score of 3.10 which is slightly positive and chi – square value (i.e. $47.06 > 9.49$) is significant for this statement. This is negative statement but just 31.3 % of students disagreed with it means most of the students’ concept about mathematics is abstract. Their understanding of project work is only to innovate new things, performing complex task etc. At this situation teacher should conduct and assign daily life related project works. Teachers have to encourage and support their students to perform the project works by using no cost, low cost and easily available materials. furthermore 45.6 % of students agreed this statement and 23.1 % of the students have neutral

view shows that most of the students have understood the mathematics is very complicated subject.

Like above, the next statement “There is biasness to assign the grade of project works” has mean score of 2.59 which is negative. This mean data shows that there is no biasness to assign the grade of project work. But 20.1 % of students strongly agreed and 36.7 % of students also agreed this statement so 56.8 % of students agreed means they are not satisfied with their teachers’ grade providing system. Only 24.8% of students disagreed with this statement which means they are satisfied with the grade provided by their teacher for the project works. The chi – square value (i.e. $33.69 > 9.49$) is significant for this statement. From the interview with teacher participants, it was found that teachers were not using any rubrics to assign the grade of projects works. This result indicates that grading students’ performance without any guideline cannot justice equally. Next statement “Project work on mathematics helps to link with our daily life activities” has mean score of 3.85 which is positive. It shows that project works help to link mathematics with our daily activities. Students can solve and understand their household arithmetic easily and interestingly. In this statement 24.9% of students strongly agreed and 52.7% of students agreed means almost 80% of the students got help from project work to link mathematics in their daily life. But 12.4 % of students disagreed to this statement which indicates that some of the students are doing project works just to get the internal marks. The positiveness of this statement is also supported by chi – square value (i.e. $132.98 > 9.49$) which is significant.

The statement “Only indoor projects are possible for internal assessment in mathematics” has mean score of 2.68 which shows that students believed that outdoor projects cannot perform for the internal assessment in mathematics. In this statement 16.6% of students strongly

disagreed and 35.5% of the students disagreed these results shows that more than half of the students has perceived as both indoor and outdoor project are possible in mathematics as per the situation. 22.5 % of students view is neutral in this statement means they can't decide possibilities of project work in mathematics. Also 25.4 % of the students agreed with this statement indicates that they just practiced and got success only in indoor project work. Same kinds of another statement "Outdoor project works are not possible for all students and all subjects" has mean 2.75 which shows students agreement with this statement. According to this data 52 % of students agreed but it is negative statement so we can conclude that they are not familiar with outdoor projects in mathematics. Majority of the students don't have experience of outdoor project means internal assessment is not being completely implemented. Whereas more than one third (i.e. 32%) of students disagreed means they understand about the outdoor project too. The chi – square value (i.e. $15.11 > 9.49$) is also significant. Last statement of project work "Project work helps to make learning permanent" has mean score of 4.19 which is positive. 53.8 % of students strongly agreed and 27.2 % of students agreed to this statement. From this result it is found that more than 80 % of the students believed that project work helps to make learning permanent. The chi – square value (i.e. $151.2 > 9.49$) for this statement is also significant. In the similar concern teacher participant T₂ shared his experience as "*students have minimized the errors while making the formula of Lateral Surface Area (L.S.A), Total Surface Area (T.S.A) and volume of some solid objects after completing the project works on that topic*". According to this data I concluded that properly conducted project works make real learning of mathematics. Project works promotes learning by doing and help to linkage mathematical knowledge with our daily life. Students learned with curiosity and gets real meaning of mathematics so the learning becomes long lasting.

In this concern, the teachers' experiences were collected through interview and found that project work is much needed component for the internal assessment as because students have been encouraged in learning through project work. In this regards teacher participant T₂ stated that *“Project work-based learning is the best way of learning mathematics”*. Which means students becomes more curious to learn and shown the active participation during learning that makes learning permanent. It was found that somehow all the teachers were engaging their students in project work for the internal assessment but they are not satisfied themselves with their practices.

When I asked in which chapters you have conducted the project work? then T₁ replied as

In present situation it is not possible to conduct and assign the project work in each chapter. I have mostly practiced in mensuration to teach area volume of solid objects. Also, one - one outdoor project work in trigonometry and statistics.

T₂ mentioned as

I have followed the curriculum and made some project works which were possible in our classroom. When teaching Set and Statistics students carried out the survey. We made and used algebraic tiles while teaching algebra. The students were asked to make circles in the sand and measure the value of pie. While teaching mensuration some activities included in the textbook and curriculum were conducted.

Similarly, T₄ shared that he has involved students in project work while teaching set and

statistics. T₃ replied that she has conducted project works on set, arithmetic and probability.

These experiences of teacher participants shows that project works are being conducted just for some chapters only as an examination. Teachers believed that project works is necessary,

promote co- operative learning, students become happy and learning happens permanently but their practices doesn't seem accordingly. Specially in some chapters like Set, Mensuration, Statistics and Probability project works have done. It is also found that group project works were focused by teachers.

When asked about availability of infrastructures and materials in the school all four teachers said that there are not proper materials to conduct the project works in the school. In this regard T₂ expressed

There are not all required infrastructures and materials in school so I could not conduct project works as much as I thought. But some teaching materials has been constructed and collected from students through their project works. Local level government and school have to process for mathematics lab in each school.

From this data I conclude that proper implementation of internal assessment will improve the learning of students as well as fulfill gap of some teaching materials. But its looks very challenging to conduct project works as per the norms of curriculum. Teacher themselves are not perfectly ready to implement this provision and also found lack of resources in the school. Regarding the use of ICT, it is found that teachers were interested to link the project work with ICT. In some case they have used ICT in classroom. In this concern T₁ state “students were asked to present their project work through PPT and they managed well”. On the other hand, T₂ expressed as *ICT could be shown using only the teachers, but even though the students were more willing to work with ICT, it could not be done due to lack of resources.* T₃ and T₄ mention that they could not use any kind of ICT tools in the classroom. Which shows that linking mathematics with ICT is a big challenge due to two reasons first one is availability of resources and second one is capability of teachers.

When I asked about relation between project works and students' achievement teachers responded as students became happy and were taken project work as discovery of somethings that make all of them active. Sometime teachers had found students' result unexpected. This is supported by the narrative of T₂ as he expressed "*sometimes the weak students have done project works better than the talented students. Because of that, I have also seen the examples of weak students being motivated and doing well in other teaching and learning*". Also, T₄ said that "students seem able to understand and apply real mathematical concepts". According to the T₁, students have minimized the errors while making the formula of L.S.A, T.S.A and volume of solid objects after completing the project works on that topic. Students were more competitive in the classroom during presentation of their project works. Viewing all these narrative of teacher participants I concluded that project works makes quality learning, conceptual learning and learning with students' interest then obviously that affect positively in the summative evaluation. This is supported by students' response that 87% of students perceived as internal assessment is essential for good results in summative assessment

Being quite new provision there seem some confusion and teacher could not implement properly. All of them were on confusion about to conduct project work in algebra. Teachers have also faced some challenges like time management, judgment of individual performance in group project work and outdoor project works. In this context, T₂ shared his one experience as

One day I was showing the relation between volume of cone is equal to one third of volume of cylinder having same base and same height by using teacher and students made materials. At that time, I could not show the exact relation numerically. Such types of activities can perform easily and exactly using readymade materials.

This narrative of teacher shows that without proper materials and preparation teacher performance cannot be excellence. To make project works effective component of internal assessment needs effective materials and diligence teachers. In mathematics sometime it's difficult to show the numerically exact relation using local materials or student- teachers made materials. So before using materials in the classroom teacher should ensure the effectiveness of materials. Similarly, T₁ shared his experience as “*there were complaints from the parents that if the students were assigned to do some project work, they would spend the whole time at home doing the project work and neglected other things like reading and writing*”. This data informed that students enjoyed while doing project works and can spent more time for project works. Furthermore students gives more priority than other reading and writing which shows the importance of project work. So teacher needs to be very careful and should give the clear instruction to the students during project work. Teacher should motivate and help students to management time properly. Students copied others' project works if same task had given.

According to constructive view project work in mathematics involves students working on tasks that require them to apply mathematical concepts, theories, and problem-solving skills to real- life scenarios. These projects often encourage students to think critically, explore mathematical principles in depth and develop analytical skills. From this research it was found that students believed that they can deepen their understanding of mathematical concepts and enhance their ability of problem solving. But students were not satisfied with teachers practices in their classroom. At the same time teachers were struggling for the projects works in mathematics. Theoretically they were aware about project works in most of the chapters but conducted in the classroom only in few chapters. Students were found more excited for the project work as they were actively participated in project work. Project work helped to

encourage students for learning and improve the achievement. Both teachers and students were not satisfied with their practices of project works in the classroom. Teachers' efforts and practices were based on their capabilities instead of curriculum framework. The similar result was found by Acharya (2019) that "Theoretically teachers were aware on formative assessment system but practically they were less implementing formative assessment practices". According to above data I concluded that without training, helpful support, availability of materials, willingness of teachers and proper supervision effective implementation of internal assessment very difficult

General Perception

In the 'general review of internal assessment' section, I discussed overall internal assessment system without focusing any specific areas. Students' satisfaction, involvement of ICT, teachers' interest, opportunities and challenges and their thinking about way forward etc. has been discussed. Students' perception and teachers' experiences on overall review is presented below.

Table 4.4

Students' general perception towards internal assessment

Items	SA (%)	A (%)	N (%)	D (%)	SD (%)	Mean	χ^2	Decision
1 I am satisfied with current internal assessment system in mathematics.	27.2	46.7	15.4	5.9	4.7	3.85	103.1	Positive
2 The internal assessment system makes mathematics learning easier and interesting	17.2	54.4	13.6	8.9	5.9	3.68	131.56	Positive

3	Our teacher follows proper criteria for the internal assessment	20.7	29	20.1	26	4.1	3.36	31.2	Positive
4	Internal assessment is not much effective as we expected.	16.6	45	21.3	14.2	3	2.42	81.2	Positive
5	This assessment promotes the use of ICT in mathematics	17.8	43.8	18.9	10.7	8.9	3.5	66.17	Positive
6	The provision of assessment system in mathematics creates more gap between talent and weak students	37.9	47.9	8.9	2.4	3	1.84	154.16	Positive
7	Internal assessment on mathematics means only to pass more students in the examination.	12.4	15.4	17.8	34.9	19.5	3.33	25.88	Negative
8	Internal assessment system helps to develop the critical thinking power.	30.8	52.1	11.2	2.4	3.6	4.04	152.33	Positive
9	Internal assessment system in mathematics helps to promote collaborative learning	36.1	49.7	8.3	3	3	4.13	157.12	Positive

SA= Strongly Agree, A= Agree, U= Undecided, N= Neutral, SD= Strongly Disagree and χ^2 - test on .05 level of significance with 4 degrees of freedom. ($\chi^2_{0.05, 4} = 9.49$), aggregate mean = 3.35

Table 4.4 consists of 9 different items related to general perception of students towards internal assessment. The weighted mean of these nine statements is 3.35 which is positive. This

mean value indicates that overall perception of students about internal assessment in mathematics is positive. First statement of the table “I am satisfied with current internal assessment system in mathematics” has mean score of 3.85 which shows that most of the students are positive with statement. The chi – square value (i.e. $103.1 > 9.49$) is also positive for this statement. For this statement 27.2% of students strongly agreed and 46.7 % of students agreed this shows that more than two third (i.e. 73.9%) of the students are satisfied with current internal assessment. But 10.6 % of the students disagreed with this statement means they don’t like formative assessment in mathematics. Similarly, next statement “The internal assessment system makes mathematics learning easier and interesting” has mean score 3.68 which is positive. Regarding this statement 17.2 % of students strongly agreed and 54.4 % of students agreed this result shows that 71.6 % of students feels mathematics interesting and easier to learn because of regular participation, student center activities, group work and immediate feedbacks under this internal assessment system. Some of the students (i.e. 13.6%) are neutral with this statement which indicates that they are not getting any opportunities and have not faced any challenges due to internal assessment. Also 14.8 % of students disagreed to this statement shows that these students perceived internal assessment as a more complicated task for learning mathematics. The chi – square value for this statement is 131.56 which is significant.

Like as above, the statement “Our teacher follows proper criterions for the internal assessment” has mean score of 3.36 which is greater than 3 so it is positive but it contradicts with teacher participants experiences. From the interview with teacher participants, it was found that they are not following all the criteria of internal assessment. According to this data from students and teacher I concluded that students has not studied about all components of internal assessment. They were only depended with their teachers’ instruction. On this statement 20.7 %

of students strongly agreed and 29 % of students agreed but 30.1% of students disagreed also 20.1 % of students are neutral for this statement. The chi – square value for this statement is 31.2 so this statement is significant. Similarly, another statement “Internal assessment is not much effective as we expected” has mean score of 2.42 which is negative. This statement is negative and its mean also found negative so here we can conclude that students perceived internal assessment equally effective as other subjects.

The next statement “This assessment promotes the use of ICT in mathematics” has mean score of 3.5 which is positive. For this statement 17.8 % of students strongly agreed and 43.8 % of students agreed means there is correlation between this internal assessment and ICT in mathematics. Teacher and students believed that internal assessment promotes ICT but in fact they both were found unable to use ICT in the classroom. But 8.9 % of students strongly disagreed and 10.7% of students disagreed with this statement means it is found that more than 15 % of students’ (i.e. 19.6 %) perception is internal assessment doesn’t promote the use of ICT. This shows that 19.6% of students reflects their response on the basis of their practice in the classroom. Also 18.9 % of students’ perception is neutral that means they haven’t used ICT in mathematics. The calculated chi – square value for this statement is 66.7 which is greater than chi – square table value (i.e. 9.49) so this statement is significant. The next statement “The provision of assessment system in mathematics creates more gap between talent and weak students” has mean score 1.84 which indicates that students believed internal assessment is equally beneficial for both talented and weak students. This is also supported by the teacher participant as he expressed “*internal assessment positively impacts on student engagement and achievement, with weaker students sometimes outperforming their talented peers*”. The chi – square value (i.e. 154.16 > 9.49) is significant for this statement. From this data I concluded that

teacher should be supportive as students' necessity level to minimize the gap between talented and weak students.

Similarly, the statement "Internal assessment on mathematics means only to pass more students in the examination" has 3.33 which is positive for this statement but being negative statement, it indicates that internal assessment in the classroom is not focused for learning. I concluded that teachers have used internal assessment to assess the learning as summative evaluation. They haven't felt any difference in learning due to internal assessment. Teacher has given more marks in internal assessment without following the proper criterions so final result of students looks good. The chi – square value ($25.88 > 9.49$) is also significant for this statement. Likewise, the statement "Internal assessment system helps to develop the critical thinking power" has mean 4.04 which shows that students' perception to the statement is positive. On this statement 30.8% of students strongly agreed and 52.1% of students agreed. In total more than 80% (i.e. 82.9%) of students believed that internal assessment helps to develop the critical thinking power. Also 6% of students disagreed and 11.2% of students were neutral to this statement which indicates they are doing assessment just for formality. The chi – square value (i.e. $152.33 > 9.49$) is also significant. The last statement of table 4.4 "Internal assessment system in mathematics helps to promote collaborative learning" has mean score of 4.13 which is positive for this statement. The positiveness of this statement is also supported by chi – square value (i.e. $157.12 > 9.49$) which is significant. Internal assessment includes group project work, group presentation etc. and students become interested to learn through discussion and cooperation. This fact is verified by the result that 36.1% of students strongly agreed and 49.7% of students agreed that internal assessment promotes collaboration learning in mathematics. But 6% of students disagreed to this statement means they still believed individual learning is

dominant to other learning styles. The calculated chi – square value is 157.12 which is more than chi – square table value (i.e. 9.49) which is significant for this statement.

The above perception of students concludes that both teachers and students have perceived internal assessment positively. Teachers have collected so many experiences during this short period of implementation time. They are practicing this provision without any training so they faced great challenge and have done some good practices. When I asked about training it was found that teacher participant T₂ has got opportunities for the training and expressed his experience as

Sometimes I have given training for mathematics teachers and I didn't get satisfactory performance of the teachers. I don't believe that implementation of internal assessment is being according to the curriculum. I have found lack of knowledge about internal assessment with teachers also does not use rubrics. Hello effect is still in the internal assessment.

The narrative of T₂ informed that teachers should have been given training before implementing this provision but this couldn't happen so there is not uniformity in teachers' practices. This also indicates that teachers have done works on internal assessment as their own understanding. Only providing training might not enough for improvement, using this provided skills in the classroom is important. In this regard, T₃ shared her experience as “no training has been received regarding internal assessment. I once participated in a 2 days training on Geogebra, but because I did not even have basic knowledge of ICT so it was very difficult to learn and could not use it in the classroom”. This data shows that effective training for every mathematics teacher is very much needed about internal assessment. They have also demanded activity-based training rather than slide based training.

Teachers also shared that there is no consistency between the marks obtained in the internal assessment and the marks obtained in the final examination. T₄ mentioned that they were not getting all support from administration for implementation of internal assessment. T₂ also added as *“if it is implemented effectively, both teachers and students will not be able to cheat on their work”*. This data illustrates that internal assessment makes more laborious to both students and teachers. So that it minimizes the cheating on their respective job. It is also found that teachers have difficulties to provide the grade in letter grading system. Teachers’ practice about terminal examination is good but for the classroom participation and project work they were not satisfied themselves with their practice.

Chapter V

Finding, Conclusion, Implication and Recommendation

This chapter deals with finding, conclusion, implication and recommendation. The first section reveals the summary and major findings of the study. After the analysis and interpretation of collected data, in this chapter an attempt had been made to derive important conclusion in second section. I have presented some implications and recommendation at the end.

Summary of the study

This study entitled “Internal Assessment at Secondary Level: Students’ Perception and Teacher’ Experiences” is an attempt to find the students’ perception and to explore the teachers’ experiences of internal assessment at secondary level. Mixed method research design was used in this study. For this purpose, I selected four secondary level school of Banke district. Four mathematics teachers and 169 students were the sample population of this study. Qualitative and quantitative data was collected using interview guideline and survey questionnaire respectively. Quantitative data was analyzed using SPSS and interpreted using table, weighted mean, chi – square test at 0.05 level of significance with four degrees of freedom. Similarly qualitative data was analyzed using general deductive method of data analysis.

Internal assessment in mathematics was found implemented gradually. Students and teachers have perceived IA positively. Students were being regular in the classroom due to internal assessment. It was found that students showed increased motivation and engagement when given opportunities for success, particularly in group activities a good group leader positively influenced others. Due to internal assessment students were confident and habitual for the final examination this mean IA is supportive for learning as well as for summative

examination. For the actual result, teachers should have been recorded all the notable activities of students but it was not found accordingly. Some students were not well known about all component of internal assessment this shows that insufficient curriculum dissemination in the ground level. From the analysis of qualitative and quantitative data, I concluded that seeds of internal assessment have been germinated and needed supports to the teachers from concern sectors for its development and proper implementation.

Findings of the Study

The major findings of this study were categorized as classroom participation, terminal examination, project work and over all view. Which are as given:

Classroom Participation

- Students' perception towards classroom participation is positive. Also, classroom participation as a component of internal assessment increases regularity of students in the classroom.
- It is found that students perceived classroom participation as an important criterion for internal assessment. At the same time teachers were primarily using attendance records as the main assessment component for classroom participation.
- Students gets opportunities to demonstrate their performance, encouragement from teachers for active participation.
- Coordination between teacher, students and parents becomes crucial to reduces the irregularity of students also students and parents become more responsible.

- Teachers faced difficulties in managing diverse student behaviors, time management, classroom room space and desk bench management, group division due to large numbers of students in a classroom.

Terminal Examination

- Based on the research and data analysis, it is found that students have positively perceived terminal examination as a component of internal assessment.
- Terminal examinations contribute to effective learning and self-realization also helps to boost students' confidence for final examinations.
- Terminal exams and immediate feedback after exams are beneficial for addressing weaknesses and work on it but teachers were not able to give individual feedbacks.
- Terminal examinations provide more revision opportunities and develop students' study habits.
- Some students consistently received low scores demotivated by their result and teachers were providing grade sheets and awarding top performers of each examination to motives the students.
- Teachers faced challenges in assessing student knowledge solely based on exam results, recognizing that external factors could influence exam performance. They also encountered difficulties in constructing question papers according to specification table and adapting to new assessment formats.
- Teacher also faced challenges with errors in question papers provided by the municipality and found that they were not using rubrics.
- Teachers utilized various resources, including textbooks, the internet, and set books, to prepare question papers.

Project Works

- It is found that over 80% of students' perception towards project work in mathematics is positive. It is also found that project work inspires both talented and less talented students.
- Around 85.6% of students perceived project work as an essential component for internal assessment. But some of the students perceived project work in mathematics as an unnecessary burden.
- Project work was found to positively impact on student engagement and achievement, with weaker students sometimes outperforming their talented peers.
- It is found that project works were not conducted on every chapters also teachers ...
- It is found that there is lack of materials and infrastructures. Lack of proper materials and infrastructure in schools hindered teachers' ability to conduct project work effectively.
- A notable majority of students (56.8%) believed that there is biasness in assigning grades for project works meanwhile teachers have faced difficulties for assessing individual performance in group projects.
- Teachers primarily conducted project work in chapters such as mensuration, trigonometry, statistics, and set often aligning with the curriculum.
- Using ICT with internal assessment was a challenge for teachers.
- While teachers believed in the benefits of project work, its implementation seemed more formal, focused mainly on examination requirements rather than true integration into teaching practices.
- Teachers faced challenges such as time management and conducting outdoor projects. There was also confusion about implementing project work in algebra.

- Students were more interested for group project works but in group project passive students gets marks without equal involvement so assessment should be strictly personal.

Overall Perception of the Internal Assessment System

- The weighted mean of students' responses indicates a positive perception of internal assessment in mathematics.
- A majority of students (73.9%) expressed satisfaction with the current internal assessment system.
- Students believed that internal assessment should serve for effective learning rather than formalities.
- It is found that students learned mathematics conceptually and interested for learning abstract contents.
- The majority of students (82.9%) agree that internal assessment helps to develop critical thinking skills and promoting collaborative learning in mathematics.
- Some students worry that their grades might not be fair. They want to make sure everyone gets treated equally in assessments.
- Teachers express a need for more training on internal assessments. They believe that hands-on training would be more helpful than traditional slide-based sessions.
- Teachers find it challenging to provide grades, especially in a letter grading system. They're also struggling with consistency between internal assessment grades and final exam grades.

Conclusion

From the analysis and interpretation of both quantitative and qualitative data I concluded that internal assessment in mathematics has been gradually implemented and is positively perceived by both students and teachers. Internal assessment is beneficial for developing students' multiple intelligences, critical thinking skills, and collaborative learning in mathematics. Internal assessment has increased student regularity in the classroom, boosted motivation, and fostered engagement, particularly in group activities.

Students perceived Terminal Examination as beneficial for learning and confidence-building. The exams provided opportunities for revision and self-assessment. It has also enhanced students' confidence and preparation for final examinations so terminal examination is supportive in both learning and summative assessments. But the practice of terminal examination was based on traditional summative evaluation methods. Construction of question papers according to specification tables was also a difficulty for the teachers. Project work emerged as a vital component of internal assessment, inspiring both talented and less talented students. It promoted engagement and achievement, with some weaker students outperforming their peers. However, students were not satisfied with the practice of project work as because inadequate project works, lack of infrastructure and biased grading system. Teachers faced difficulties in managing diverse student behaviors, time management, and providing individual grade from group works. Similarly teachers were unable to implement project work completely due to lack of materials, infrastructure, over workload and lack of awareness among some students about the components of internal assessment. Despite these issues, the study concludes that project works fosters critical thinking and collaborative learning also it can significantly enhance students' educational experiences.

Although teachers have done so many incredible actions to develop the culture of internal assessment it is not found that they have followed all the criteria .Overall, the study identified several challenges including inadequate recording of students' activities, lack of awareness among some students about the components of internal assessment, insufficient curriculum dissemination, teachers training and infrastructure. The study recommends that internal assessment should be made compulsory in mathematics, with regular activities and accurate record-keeping. Teachers need to adapt their practices to align with the curriculum and utilize assessment for learning. The findings and recommendations of this study provide valuable insights for improving the internal assessment system and ensuring it serves as a meaningful tool for enhancing students' learning outcomes.

Implication

Based on the major findings and conclusion of the study, this study with the topic “Internal Assessment at Secondary Level: Students’ Perception and Teachers’ Experience” has implication in different fields. The main focus of this study was to find the students’ perception and teachers’ experiences regarding internal assessment at secondary level. The results obtained from this research is matter of consideration for teachers, students, school administration, curriculum developer, policy makers etc. To improve the internal assessment system and reduce the challenges for implementation this study provides real field data. Some of the major implications of this study are as follows:

- As a new system, students and teachers feel difficult to understand and execute it in such circumstances this research is fruitful and supportive document for both of them.
- The result of this study provides valuable information to curriculum developer, policy makers and educationist for the new planning.

- This research supports to analyze the major opportunities and challenges for mathematics teachers due to internal assessment.
- It is useful for the students to know the components of the internal assessment properly.
- It is helpful for the researcher to know the present practice as well as to find the gap in internal assessment.
- This research is helpful for concern authorities to organize training for teachers, monitoring and supervision with the full of supportive intension.
- It is helpful for teacher, administration, students and other resource person to be more responsible and accountable for the practice of internal assessment.
- It is helpful for teacher to compare their practices and adapt some good practices.

Recommendation

From this study, it has been concluded that there are various problems in the field of internal assessment system at secondary level. Specially, problems are related to the teacher and students. This research was focus on students' perception and teachers' experiences towards internal assessment at secondary level so couldn't cover all the topic related to the internal assessment. This study was limited to only four schools with four mathematics teachers and 169 students of grade 10. So, during this research I have found some other gaps for the further study. Thus, those persons who want to conduct their research in the similar areas can be studied deeply on the following topics.

- Students' experiences of internal assessment.
- Implementation of internal assessment at basic level.
- Quality and reliability of internal assessment.

- Internal assessment and achievement in final examination.
- Practice of internal assessment in community and private school.

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Appendix
Survey Questionnaire

Dear students

I am Surendra Bhattarai, a student from Central Department of Education, Department of Mathematics Education, Kirtipur. I am conducting research entitled "**Internal Assessment at Secondary level: Students' Perception and Teachers' Experience**". To complete this research, I have prepared a set of questionnaires based on the internal assessment system at secondary level. The questionnaire has been prepared to explore students' perception towards internal assessment system. Therefore, your kind co-operation in responding all the questions will be extremely valuable to fulfill the objectives of this study. I appreciate your perception and assure you that your response will be completely anonymous and confidential. Please, feel free to put your response just because of your data will be used only for research purpose.

Name of school:

Name of student:

Gender:

(Strongly Agree – SA, Agree – A, Neutral – N, Disagree – D, and Strongly Disagree – SD)

S.N	Statements	SA	A	N	D	SD
Classroom Participation						
1	I am being regularly present in the classroom due to Internal Assessment.					
2	Classroom Participation is an important criterion for internal assessment.					
3	I got opportunities in the classroom to show my participation and skill.					
4	Classroom Participation also help me to develop the presentation skills.					
5	I try to do something new on my project presentation.					
6	Presentation is less effective in mathematics class comparing with other subjects due to nature of content.					
7	I started to learn mathematics conceptually since this type of practices.					
8	Our teachers encourage and provide support for active participation and presentation in the class.					
9	It takes long time to get individual response from our teachers.					
10	Regular participation in the class is an important component for internal assessment that helps for good result in summative assessment.					
11	We got opportunities to explore and develop the new mathematical knowledge and skills.					

12	The active participations of students in the class help to generalize abstract concept of mathematics and improve achievement.					
Terminal Examination						
13	Terminal examinations are helpful for the effective learning and self-realization.					
14	The maximum number of terminal examinations requires for better result and improvement.					
15	Terminal examination develop the confidence of students for final examination.					
16	Result of term exam demotivate the students who got poor marks on mathematics regularly.					
17	Immediate feedback after term exam is more beneficial to solve the weaknesses.					
18	More than two term exams are needed for making internal assessment better and transparent.					
19	In the sense of term exam, we got more revision opportunity.					
20	More internal exams give pressure time and again for students.					
Project work						
21	The project work inspires talented students and offers special help for less talented one.					
22	Project work is important and effective component for internal assessment.					
23	Project work in mathematics gives unnecessary burden for students.					
24	It is not suitable to give project work for all units of mathematics especially content area.					
25	There are all necessary materials and infrastructures for mathematics project presentation in our school.					
26	Project work as the major component of internal assessment is not appropriate for mathematics subjects.					
27	There is biasness to assign the grade of project works.					
28	Project work on mathematics helps to link with our daily life activities.					
29	Only indoor projects are possible for internal assessment in mathematics.					
30	Outdoor project works are not possible for all students and all subjects.					
31	Project work helps to make learning permanent.					
General Perception						
32	I am satisfied with current internal assessment system in mathematics.					

33	The internal assessment system makes mathematics learning easier and interesting.					
34	Our teacher follows proper criterions for the internal assessment.					
35	Internal assessment is not much effective as we expected.					
36	This assessment promotes the use of ICT in mathematics.					
37	The provision of assessment system in mathematics creates more gap between talent and weak students.					
38	Internal assessment on mathematics means only to pass more students in the examination.					
39	Internal assessment system helps to develop the critical thinking power.					
40	Internal assessment system in mathematics helps to promote collaborative learning.					

Furthermore,

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Thank you.

Interview Guideline for Teacher

- 1. Introduction**
- 2. Understanding of internal assessment**
- 3. Classroom participation:** practice, advantages and challenges, time management, use of ICT and suggestions.
- 4. Terminal examination:** teachers' views, practice, output, difficulties
- 5. Project work:** understanding, practice, resources, students activities/ activeness, role of ICT, measurement , feedback, challenges & opportunities and suggestions.
- 6. Teacher training**
- 7. Strength and weakness of internal assessment**
- 8. Before and after this provision**
- 9. Modification/correction**
- 10. Extra time**