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STUDENTS' PERCEPTION TOWARDS THE INTERNAL ASSESSMENT IN SEMESTER SYSTEM

**STUDENTS' PERCEPTION TOWARDS THE INTERNAL ASSESSMENT IN
SEMESTER SYSTEM**

**A
THESIS
BY**

TIKARAM BASTOLA

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

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शिक्षा शास्त्र केन्द्रीय विभाग

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.....
Mr. Abatar Subedi

(Head)

Date: 27 December, 2022



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By

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"Students' Perception Towards the Internal Assessment in Semester System" has
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Recommendation for Acceptance

This is to certify that Mr. **Tikaram Bastola** has completed his M. Ed. thesis entitled "**Students' Perception Towards the Internal Assessment in Semester System**" under my supervision during the period prescribed the rules and regulations of Tribhuvan University, Kirtipur, Kathmandu, Nepal. I recommend and forward his thesis to the Department of Mathematics Education to organize the final viva-voce.

.....

Mr. Krishna Prasad Adhikari

(Supervisor)

Date: 27 December, 2022

Dedication

This thesis is dedicated to my father **Mr. Nanda Raj Bastola**, my mother **Mrs. Muna Devi Bastola**, and my three brothers **Punya Prasad Bastola, Nabaraj Bastola & Dipak Bastola**. Whose love, support and encouragement have enriched my soul and inspired me to purpose and completed this research.

Declaration

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

.....

Tikaram Bastola

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Defense Date: January-30, 2023 (2079/10/16)

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Date: January, 2023

Tikaram Bastola

Abstract

This thesis entitled "Student Perception Towards the Internal Assessment in Semester System" is a demanding topic of the research. The main objectives of this study were to explore the student's perception towards the internal assessment system in mathematics education and to analyze the improvement process of internal assessment system in mathematics education. This study was based on a mixed-method research design. This study was delimited within the Kathmandu valley. This study was based on Master level student who studied in semester system. A total of 110 sample students were selected by stratified sampling from three different colleges for questionnaire and among them 6 students by purposive sampling for interview. In this study questionnaire and interview guidelines were the tools of data collection.

This study found that students were very positive towards the internal assessment system. But dissatisfied with the process of internal assessment system. This study found that, 80% compulsory participation was not followed by all the college. Similarly, this study found that presentation is very essential tool to develop the teaching skill to all the student. This study also found that, home assignment is knowledge expanding factor of our assignment system. This study also found that, internal exam (class-test) was conducted as in summative manner rather than formative manner. This study also found that, authorities were not properly disseminating the internal assessment system to all the students, teacher and all the colleges. It was also found that, students follow the rules, teachers to be sincere, administration support to both student and teacher, university conduct orientation programme to all the teachers, will help to improve the assessment system in mathematics educations.

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List of Abbreviation

LGS: Letter Grading System

PBL: Problem Based Learning

SLC: School Leaving Certificate

ICT: Information & Communication Technology

ANOVA: Analysis of Variance

SPAQ: Students Perceptions of Assessment Questionnaire

AfL: Assessment for Learning

TU: Tribhuvan University

B. Ed.: Bachelor of Education

M. Ed.: Master of Education

B.S: Bikram Sambat

ZPD: Zone of Proximal Development

MKO: More Knowledgeable Others

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Chapter I

Introduction

The first step in any task, research or communication is always an introduction. Introduction is the first action when we enter into a classroom or meet a new friend for the first time. So, the introduction is also the initial part of writing in research. Such that the general overview of the research is provided in the introduction. The background of the study, statement of the problem, objectives of the study, the research question, justification of the study, delineation of the study, and the definition of key terms were all covered in this chapter.

Background of the Study

"Assessment is a broad phrase that encompasses a whole range of processes to learn more about student learning, and the formation of value judgments concerning the learning process" (Robert & Norman, 2000, cited in Khanal, Ghimire, Bhattarai, Niure, & Ghimire, 2019, p. 06). According to the Cambridge English Dictionary, "assessment is the act of judging or deciding the amount, value, quality, or importance of something." As a result, assessment is a tool for determining the outcomes of the learners. Today, the word "evaluation" has been changed to "assessment," because "assessment measures the process and outcomes of the learners" (Khanal et al. 2019, p. 197). This is the definition of assessment, and to get this definition, we have to determine what are the tools to measure it and how students perceive the tools.

The measuring tools of the learners' outcomes are mainly examination, and examination is the essential tool of assessment. According to Black and William, the essence of effective assessment for learning is as follows:

To the extent that evidence about student achievement is elicited, interpreted, and used by teachers, learners, or their peers to make decisions about the next

steps in instruction that are likely to be better or better founded than the decisions they would have taken in the absence of the evidence that was elicited (Westbroek et al. 2020, p. 10).

From the above article, the assessment is the value judgment by the teacher, peers, and learners themselves for the next step of learning. As a result, evaluation is linked to the student and their attitude because if the student has a positive attitude toward any subject (like mathematics), then they have a clear concept about it. So, when the students feel it is for them and have positive views about any subject, then teaching and learning will be effective. So, students' attitudes play a vital role in the learning process.

According to Zan and Martino (2008), "attitude is a fundamental concern in the learning of mathematics" (Joshi, 2017). An attitude can be positive or negative evaluation of people, objects, events, ideas, and activities. It could be concrete, abstract, or just about anything in our environment. Attitude can be seen as more or less positive. A positive attitude towards mathematics reflects a positive emotional disposition concerning the subject, and similarly, negative attitude towards mathematics relates to a negative emotional disposition. Attitude toward mathematics is defined as a general emotional disposition toward school mathematics. This should not be confused with an attitude toward the field of mathematics or towards some specific area within mathematics. Attitude development may be influenced by several factors operating inside or outside of school, by the teacher, and by the learning environment.

Different civilizations developed different mathematical number systems (Yadav et al. 2017, p. 23). In this developmental process, the mathematical development was divided into two parts by geographic perspective (eastern and

western). Different places follow different evaluation systems. The term "evaluation" is changed to "assessment," but the meaning is quite the same. Mathematics has a great role in human life, and our daily life and all civilizations cannot be imagined without mathematics. It is used in every activity of our society. It is needed for the study of most disciplines. It is the foundation of all the sciences. Nowadays, mathematics is considered an important subject called "the queen of all sciences" and "the key gateway of all sciences." It is directly related to the cultural, political, social, and geographical conditions of society.

Mathematics is useful in the daily life of all human beings, this is the elementary definition of mathematics. In higher education, mathematics is a very abstract subject. We can't use it in daily life. But further study of science and technology, the study of space the higher mathematics is useful. Because of the abstract nature of mathematics, students feel a little bit bored while studying higher mathematics. In this scenario, the method of assessment does work. Internal assessment helps to motivate students and gives them the chance to correct their weaknesses by themselves, learn from group work, and maintain regularity in the classroom (making the chain of learning). But if we take the internal assessment as an external assessment, then it will create some problems.

In our semester system, internal and external assessment have different meanings. Internal assessment is connected with the formation of better knowledge, it allows the students to improve their learning performance, the students make their evaluation, classrooms are student-friendly, etc. However, in the external assessment, if you do not pass the subject the first time, you must wait until the next time. But in the internal assessment, if you want to score higher, you can do, by doing the assignment. All the marks obtained by the student by doing the assignment will be

added to the final result. So, students are engaged in the internal assessment process, and what they do they get results immediately and a chance to get better. But if the student takes it in a normal way, then it could be harmful to the student. As a result, student's perception is inextricably linked to the internal assessment system.

Statement of the Problem

Assessment is a part of formal education all over the world. A few years ago, all Nepali higher education institutions conducted only paper and pencil tests. Among all institutions, Tribhuvan University is the oldest and the largest university in Nepal and also follows the paper and pencil test for evaluation. From 2014/15, TU has been implementing a semester system at the master's degree (Rai, 2021). Education is one of the faculties with the largest number of students. After that, the evaluation system is divided into two parts: internal assessment and external assessment. Internal assessment is conducted by the subject teacher, and external assessment is conducted by the dean's office of education. Both internal and external assessment systems have their criteria. Here, we left out external assessment and focused only on internal assessment.

According to the mathematics curriculum for the Master's degree, the internal assessment covers 40% of the evaluation, and the rest is fulfilled by the board exam conducted by the dean's office. All subject teachers are responsible for this 40% internal assessment. For all subjects, the internal assessment system has the same criteria. However, I believe that in some subjects, the halo effect is working, plagiarism is increasing, grades are given without proper evaluation, and assignments are not properly conducted. I am also involved in this system and feel bad. So I want to find out, do my friends perceive the same thing or not? The copy-paste system, in

my opinion, is inadequate, what do other students think? They either think it is good or not. If it is not good, then how can we make it good?

The problem of this study will be mainly concerned with the perception of the student towards the internal assessment system of the semester. Internal assessment mainly covers the participation and presentation of students in the classroom, home assignments, and class tests. Presentations and home assignments are done in groups and individually, too. According to the constructivist approach, group work is the best way to learn, but what I experienced here is that some members of the group did all the work and other members just said yes, we did, and those who were not involved in group work did not learn. In this situation, which method is better for learning? Similarly, not all but some class tests are taken only once, without giving students another chance. This event kicks me into gear to find out the student perception towards participation and presentation of the student in the classroom, group work, home assignments, and class tests of the internal assessment system.

Objectives of the Study

For the fulfillment of this study, the objective is the essential part. Objectives give the meaning of the study. So, the general objective of the study was to know the perception of the student towards the internal assessment in the university, and the specific objectives were as follows:

1. To explore the students' perception towards the internal assessment system in mathematics education.
2. To analyze the improvement process of the assessment system in mathematics education.

Research Question of the Study

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

1. How do students experience the internal assessment system?
2. In what ways can the internal assessment system be improved?

Justification of the Study

I am a student of TU. I am just doing my master's degree in the Central Department of Education at TU. Because of the results of the previous semester, I felt compelled to conduct research on internal assessment at this campus during my third semester. My all classmates score higher than 30 out of 40 on the internal exam, but only a few passed in the final exam. So, I want to know what is the gap between internal and external exams in our university. From this point of view, my study may help in this aspect:

- This study will be beneficial for the subject committee on mathematics education at TU in reviewing and revisiting the internal assessment system.
- This study will be supportive for subject teachers because the subject teacher can choose a better way of conducting the internal examination, which gives better results in the final exam.
- This study will motivate the student who is coming to university.
- This study will be helpful for other faculties and institutions in reviewing their assessment systems.
- This study would also open the door for further study of internal assessment systems, e.g., by teachers, curriculum developers, policymakers, etc.

Delimitation of the Study

Every research has its strengths and weaknesses, and a single person or any small organization can't conduct the research in a whole country or a large area. Because there are some barriers in research, which is called delimitation of research, the delimitations of this study were as follows:

- This study was delimited to the faculty of education at Tribhuvan University.
- This study was delimited to the department of mathematics education.
- This study was delimited to questionnaire forms and interview guidelines to collect the data.
- This study included only mathematics students in the fourth semester of batch 2019/20.
- The sample for the study was selected by stratified sampling and purposive sampling.
- This study was delimited to the internal assessment system of the semester system of the Department of Mathematics Education at TU.

Operational Definition of Key Terms

Internal assessment. Assessment is a kind of evaluation or value judgment that evaluates every aspect of a student, e.g., classroom activities, home assignments, presentations, portfolios, written exams, etc. There are two types of assessments in the semester system: internal and external, and both are compulsory to complete the course. The internal assessment covers 40% of the full marks of the course, and it is assessed by classroom participation, classroom presentation, home assignment, and written exam in the semester system. In this study, the term "assessment" is focused only on internal assessment.

Semester system. The semester system is a system of one academic year divided into equal parts over the six months of each semester. The semester system has a grading system and credit hours. The semester system is student-centered and practical-based. In the semester system, students are more active than the teacher. In our college, the semester is ICT-friendly. In the semester system, the assessment is both formative and summative. The formative assessment covers 40% and the

summative assessment covers 60% of the total assessment. The 40% is called the internal assessment.

Student. A student is a person who wants to know something about a particular area. Here student means a person who is formally studying during the semester.

Perception. Perception is a person's attitude toward any object. Perception can be the positive or negative evaluation of people, objects, events, ideas, and activities. It could be concrete or abstract. The perception here is concerned with the evaluation of students in mathematics education. That means perception is the perspective of the student towards any subject, and that subject is the internal assessment in the semester system.

Chapter II

Review of Related Literature

Research can't be completed without studying or reviewing the related literature (Niure, 2018, p. 39). So, the review of related literature is an essential part of the research. Literature assists us in identifying an appropriate topic, identifying the research gap, establishing objectives, determining limitations and delimitations, and so on. In this chapter, we ensure the review of the empirical literature, the review of the theoretical literature, and the conceptual framework, which are given in the following heading.

Empirical Literature Review

Mussawy et al. (2021), a team from Afghanistan, did a study entitled "Students' and teachers' perceptions and experiences of classroom assessment: A Case Study of a public University in Afghanistan." The goal of their study was to examine students' perceptions of classroom assessment at a public university in Afghanistan. For the study's fulfillment, researchers used mixed-methods research design. Sample of this study was 400 students through random sampling from three colleges: agriculture, education, and humanities. To collect the data, they used semi-structured interviews with a purposeful sample of 18 students and 7 faculty members. They used the data analysis tools as descriptive statistics, one-way ANOVA and t-test for quantitative data, and NVivo 12 for qualitative data. From their findings, the quantitative results suggest that students have positive perceptions of the current assessment practices. Furthermore, the study's findings show that students and faculty members were dissatisfied with the grading policy and the emphasis on summative rather than formative assessment. The findings also suggest that faculty professional

skills, such as assessment and teaching methods for engaging students in assessment processes, should be improved.

Joshi (2018), did a master's-level thesis entitled "Attitude of Master Level Students Towards ICT in Mathematics Education." The objectives of this thesis were to find out the attitude of the master's level student towards ICT and compare boys' and girls' attitudes towards ICT in mathematics education. The research design was the mixed method. The study site for this research was Tribhuvan University, Kathmandu. Data collection tools included questionnaires and in-depth interviews. The sample size for this research was 100 students for quantitative data by simple random sampling and 4 students for qualitative data by purposive sampling. The data were analyzed using a five-point Likert scale, and it was concluded that there was a positive attitude towards ICT in Mathematics Education and a significant difference between the attitudes of boy and girl students towards ICT in mathematics education. It also concluded that there was a well-designed course, sufficient materials and equipment in the ICT lab, effective learning activities, and a good access and evaluation system for ICT in mathematics education.

Chamjung (2018), conducted the study "Student Perception of the Semester System in Mathematics Education." The purpose of this study was to learn about students' perceptions of the semester system in mathematics education. A survey research design was used for this study. The sample for this research was 65 students selected by simple random sampling from Tribhuvan University, Kathmandu. A set of questionnaires with a Likert attitude scale was the tool for data collection. The questionnaire consists of 42 statements with different aspects such as curriculum, learning resources, use of ICT, student satisfaction, and the future existence of the semester system. The collected data were organized, tabulated, analyzed, and

interpreted by using statistical tools such as percentage, mean, and standard deviation. Also, these tools were employed to find out the student's perception of the semester system. The researcher concluded that the university student had a positive attitude towards the semester system and found that there was no significant difference between the student's perception of the curriculum, learning resources, use of ICT, etc. The researcher tried to find out the satisfaction level of the students towards the semester system and mentioned that students are generally satisfied.

According to the findings of the preceding study, students prefer semesters than annual. In the annual system, the exams are held every year. In the semester system, the exams are held every six months or half a year, and the external exam covers only 60 % of the course. Students were enjoying this system but nowadays what students think about the internal assessment system in university is the main concern of this study

Acharya (2016), did a research entitled "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.

From my first literature I concluded as follows, students are positive about the semester system because the passing rate is higher than the annual system. But the teachers and students are not satisfied with the grading system and examination policy to balance formative and summative evaluation. In this scenario, the same things are happening in our university. Students like the semester system, but internal and external results do not match. Because there are many students in our batch who performed well in internal assessments but performed poorly in external assessments. So, in order to balance both outcomes, we must identify the primary influencing factor. One of these influencing factors is the process of internal assessment system. So, if students perceive the internal assessment system in a positive way, we may focus on external assessment. So, the main concern of this study is to explore the perception of the student towards the internal assessment system in mathematics education.

The body part of LGS is the student's internal assessment. In Nepal, the letter grading system is introduced first in SLC before being introduced in Universities (mainly in education). Students are enthusiastic about LGS at both school and university, but what do they think of the internal assessment system? So this is the research gap in my study.

Research gap. From the above literature, there were lots of research that indicates the perception of students and teachers towards assessment, LGS, the semester system, etc. But in our university, on the education faculty, there is the same internal assessment system from curriculum and syllabus formation. In our university, the internal assessment system is not revised after the semester system is

implemented. The assessment system is changed if the voice of stakeholders is raised, and in academic fields, the voice is raised through research papers. The researcher should conduct extensive research in any field to identify block holes. After that, the voice is raised and address also. When I was studying the research, papers related to the assessment system, I found many papers related to student assessment through ICT tools, ICT's applications in school-level assessment, and other areas, but not to internal assessment at the university level. There has been done a very few numbers of research at the master's level on the topic of the internal assessment system or in the field of internal assessment. The assessment system is directly related to the student's achievement as well as the student's perception of it. So how do students perceive our internal assessment system in the semester system? Are there any block holes or not? Is it already sufficient to evaluate or not? If it is not sufficient to evaluate students' all-round learning outcomes, then what are the ways to make it sufficient? There was not enough literature to answer this type of question, which I have already studied. For this reason, this topic was appropriate one for study.

Review of the Theoretical Literature

There are many theories relating to the learning process and assessment. All of them are directly associated with learning, not assessment, because assessment is the tool for measuring the learning outcomes of the learner. Among them, the most recent and most popular, and suitable to my research, is constructivism. Internal assessment is evaluating students' activities by observing, facilitating, guiding, motivating, and recording their activity, as well as providing feedback to them several times. All of these activities are guided by constructivist learning theory. So, constructivist learning theory will be the most suitable theory for my study.

Constructivism. Constructivism is an important learning theory in social science. Supporters of constructivism argue that people actively construct or make their knowledge by collaborating with society (Bhattarai, 2017, p. 204). Learners use their previous knowledge as a foundation and build on it with new things that they learn. Constructivism is crucial to understand as an educator because it influences students learning process. Learners' backgrounds and previous knowledge impact how they can learn. So, educators can use constructivist learning theory to help their students understand their previous knowledge. If we are a current or aspiring educator, it's important to get the education and credentials you need. But it's also important to understand learning theories and how they impact us and our students. It's important to understand how teachers can apply constructivism inside their classrooms to create a unique learning environment for students. In a constructivist classroom, the teacher has a role in creating a collaborative environment where students are actively involved in their learning. Teachers are more facilitators of learning than actual instructors. Teachers must work to understand the pre-existing conceptions and understandings of students, then work to incorporate knowledge within those areas. Teachers will also need to adjust their teaching to match the learner's level of understanding.

According to Rai (2021), "constructivist classrooms rely on four key areas to be successful, shared knowledge between teachers and students, shared authority between teachers and students. Teachers act as a guide or facilitator, and learning groups consist of small numbers of students." From the perspective of the constructivist approach, the classroom is very different in many ways, so the teaching and evaluation (assessment) processes are also different. Constructivist classrooms focus on student questions and interests, build on what students already know, focus

on interactive learning, and are student-centered. Teachers have a dialogue with students to help them to construct their knowledge. Constructivist classrooms often have small group work, collaborative and interactive activities, and open dialogue about what students need to find success (Western Governors University 2021, cited in Rai, 2021).

Social constructivism. Lev S. Vygotsky (1896–1934), was a famous scholar who emphasized society. He criticized the theory of behaviorism and Piaget's theory of constructivism because they ignore society. Vygotsky has a different view on the construction of knowledge, he always focused on the interaction between learners and their society. Our classroom is a mini-society. So, on this topic, I want to review constructivist (Vygotsky) learning theory because constructivist learning theory argues that every individual can gain knowledge by relating, connecting, and creating. Vygotsky always argues that to assess outcomes, you are always in a learner society, i.e., in the classroom. When we are in the classroom to observe and motivate the student, keeping a record of their activities in a file gives us the power to make decisions for the student.

In Vygotsky's theory, every individual construct knowledge step by step. In internal assessment, every individual assesses step by step. For example, after completing one chapter, one should evaluate oneself, and if one achieves the objective of this chapter, move forward, otherwise, repeat again and again till to achieves the objective. Internal assessment, which is the same process as constructivism, focuses on learning, evaluating, and forwarding. Because in constructivism, you build one knowledge and then move on to the next. In this point of view, social constructivism supports internal assessment in a practical way.

Conceptual Framework

The guide or pillar of research is learning theory, whereas the conceptual framework is the research roadmap. According to Niure (2018), the conceptual framework is the figurative description of the researcher's mindset to complete the research. This study will be based on the following areas:

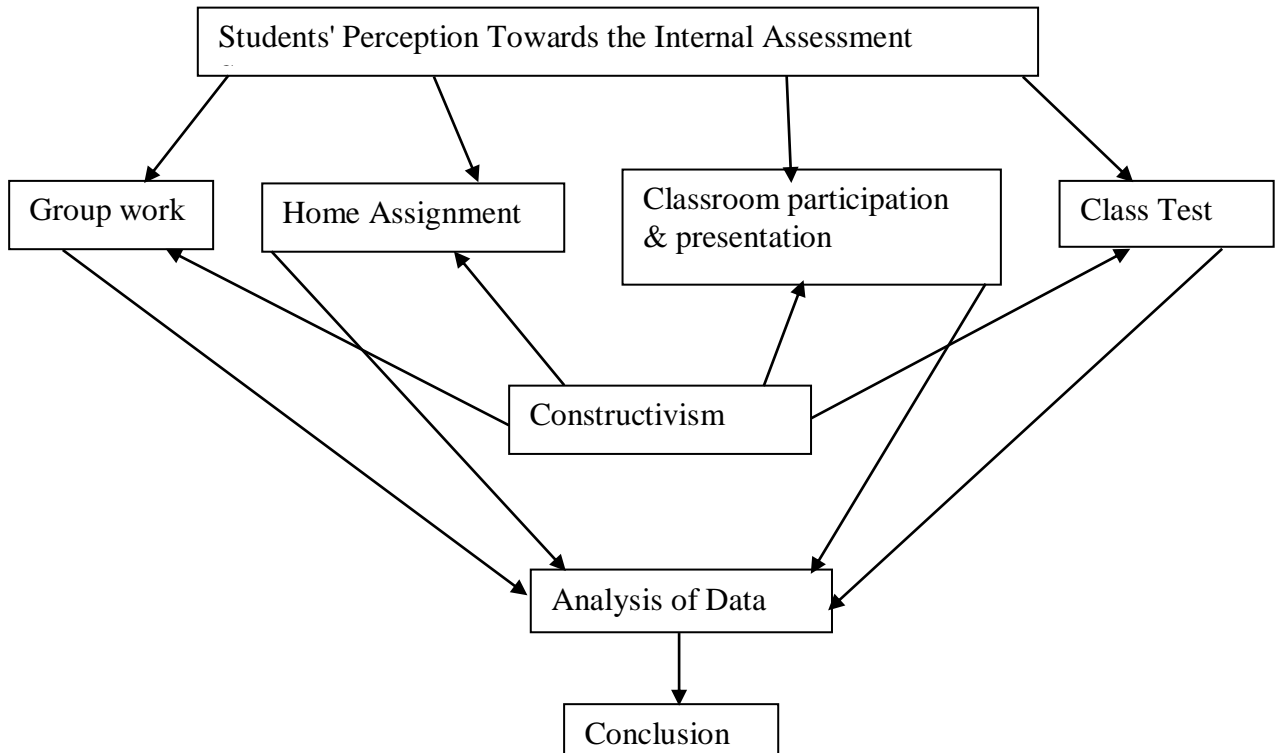


Figure 2.1 *Conceptual Framework*

In the first step, researcher prepared the questionnaire related with group work, participation and presentation, home assignment, class test, and overall review of internal assessment system. Group work is related with MKO (more knowledge others), home assignment is related with ZPD (zone of proximal development). Because in home assignment students got opportunity to search and discussed with other. Vygotsky's social constructivist learning theory focus on collaborative learning so participation and presentation is linked with this factor. Also, constructivist learning theory argue in formative assessment and class test is related with formative

assessment. And in the second step, the researcher finds out the perception of the student towards all components of the internal assessment of our semester system through the questionnaire and interview. Then the data was analyzed and interpreted with the help of learning theory. The data was analyzed in four categories they were group work, participants and presentation, home assignments, and class test. Finally, made the conclusion.

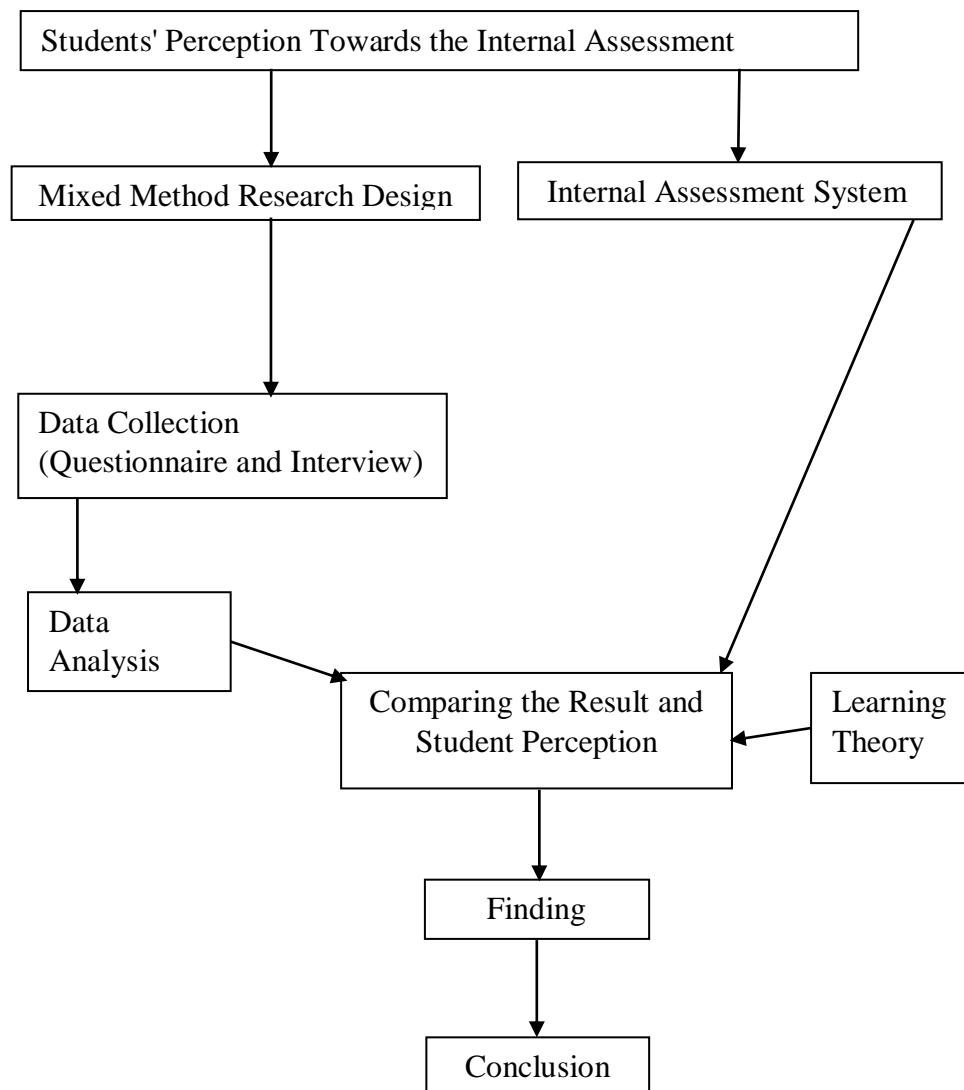


Figure 2.2 *Procedural Framework*

For the fulfillment of this study, researcher followed this procedural framework. In this study, first of all, researcher analyzed the internal assessment system and collect the data by a mixed-method approach. First collect the quantitative data and analyzed the quantitative data. After that collect qualitative data through interview and analyzed qualitative data. After that compare the implemented internal assessment system and student perception of the internal assessment system with the help of constructivist learning theory. The theory focuses on four dimensions of the internal assessment system which are student participation and presentation, group work, class text, and home assignment.

Chapter III

Methods and Procedures

The pursuit of an answer to the question "how to do research" is known as research methodology. In other words, the scientific procedure that dictates how the researcher does the research in a systematic manner. 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

The plan, framework, and strategy for the inquiry to address the research questions and manage variance is known as the research design. The research design serves as a road map or general direction on how to execute the study successfully. For the fulfillment of this study researcher used mixed-method (explanatory-sequential) research design. According to Khanal (2020), asserts that the explanatory sequential technique is characterized by the collection and analysis of qualitative data in a second phase that builds on the results of the initial quantitative results. According to Niure (2018, p. 184), in quantitative research, the sample size is large and the result can be generalized to a huge population. But the large sample size gives superficial data. Here the researcher wants in-depth data, so only quantitative research does not cover the whole area of assessment. Similarly, the sample size in qualitative research was small, yielding detailed information that could not be generalized to the entire population. The researcher requires detailed data as well as generalizable results for this topic. So, the researcher followed an explanatory sequential (mixed method) design that was conducted with the students of the Department of Mathematics Education at Kirtipur, Mahendra Ratna Campus, Tahachal, and Sanothimi Campus,

Bhaktpur, of Tribhuvan University. The data was collected from primary sources. The data was collected through an attitude scale form as well as a semi-structured interview guideline. The data was analyzed using a five-point Likert scale and a thematic approach. The themes were group work, participation and presentation, home assignment, class test, and an overall review of the internal assessment system.

Population of the Study

This study included all master's degree students at Tribhuvan University in Nepal during the academic year 2019-20.

Sample and Sampling of the Study

Sampling is the process by which a relatively small number of individuals, objects, or events is selected and analyzed to find out something about the entire population (Niure, 2018, p. 90). The basic objective of any sampling design is to minimize the population within the limitations of cost, materials, time, researcher capability, and the gap between the values obtained from your sample and those prevalent in the study population. The underlying premise in the sampling is that if we select the sample in a way that genuinely represents the study population, we can provide a fairly true reflection of the sampling population that is being studied with a sufficiently high degree of probability (Kumar 2011, cited in Lamsal, 2022).

The sample of this study was 110, among them 58 students from Central Department of Education, Kirtipur, 29 students from Mahendra Ratna Campus, Tahachal, and 23 students from Sanothimi Campus, Bhaktpur, by stratified sampling, and 6 students by purposive sampling, including one boy and one girl from each sample campus (Sample was only from Mathematics department). An in-depth interview was conducted with six students who were selected by purposive sampling, and other students gave their responses to the questionnaire form.

Data Collection Tools and Techniques

Data collection is a very important part of the study. There are many tools to collect the data from the selected sample. In this study, I collected data related to the internal assessment system at the university by using the following tools:

Attitude scale. There are four types of attitude scales, among them the Likert and Thurston scales are mainly used in educational research (Niure, 2018, p. 122). In this study, I used the Likert attitude scale to determine the student's perception towards the internal assessment system in the university. R. Likert created the Likert attitude scale in 1932, and it was revised by Bird, who gave it the name summated scale (Niure, 2018, p. 122). On this scale, every statement has five options: strongly agree, agree, undecided, disagree, and strongly disagree. For all five options, assign different numerical values. For a positive statement, the numbers 5, 4, 3, 2, 1 correspond to SA, A, U, D, and SD, respectively. But for the negative statement, assign the reversed numerical value, i.e., 1, 2, 3, 4, and 5, for SA, A, U, D, and SD, respectively. With the assistance of other related literature and my supervisor, I prepared a questionnaire having 30 statements to fulfill the purposes of my study. The thirty statements are related to group work, participation, and presentation, home assignment, class test, and an overall review of the internal assessment using a five-point Likert scale.

Interview guideline. An interview is an attractive proposition involving a set of assumptions and an understanding of the situation, which is not normally associated with a casual conversation. Interviews are also referred to as an oral questionnaire by some people, on which data is collected directly from face-to-face contact. In an interview, the interviewee expresses their internal thoughts, interests, personal thoughts, opinions, etc. By observing the interviewee's facial expression, the

interviewer can sense their internal thoughts. To conduct the interview and find out the in-depth data. First of all, I analyzed the quantitative data and prepared an interview guideline, using the results of the quantitative data as a reference. The interview guideline was related to the process of internal assessment and implementation, components of internal assessment, weaknesses of internal assessment, and ways of improving the internal assessment system.

Reliability of tools. The basic idea of the reliability of tools is the "consistent result in testing and retesting" (Freeman). The split-half method was used to estimate the reliability of the attitude scale form. A pilot study was conducted to assess the reliability of these tools or instruments. The pilot study was carried out on 10 students at the master's level at TU. Each statement was classified as odd or even, and the response was calculated using a five-point Likert scale. Every item was evaluated based on its merit type. Karl Pearson's correlation coefficient was used for the reliability of the statement, and the numerical value of the correlation coefficients was 0.78 (see on appendix C), which was stronger positive correlation. The odd and even statements had a stronger positive correlation, which we can use in the final test.

Validity of tools. For the validation process, the attitude scale form and interview guidelines were taken from reviewed literature. Tools were modified under the kind control of the supervisor and experts of the subject-based literature. Before the validity test, there were only 28 statements, but after discussing with my supervisor, I prepared two additional statements covering the bias and the authority's position in the internal assessment process.

Data Collection Procedures

For this purpose, the researcher obtained permission letters from the Central Department of Education, Department of Mathematics Education, TU, Kirtipur. After

selecting the sample campus and sample size by stratified sampling and purposive sampling, the researcher requested all of them via social media (Facebook Messenger) and Gmail. After that, the researcher requested all of them to fill and submit the questionnaire form. This is for quantitative data. For qualitative data, I requested six students for in-depth interviews and time. The in-depth interview was virtual because of the respondents' interest and their time. For this data collection procedure, I prepared a question set for quantitative data and an interview guideline for qualitative data. The in-depth interview was recorded on laptop. After the responses of all students to the questionnaire form, the data were categorized and tabulated. Then I listened to the recorded audio on laptop, and made some observations, then analyzed all the data systematically.

Data Analysis Procedure

Data analysis in QUAN-qual (mixed) consists of preparing, conducting, organizing, and analyzing the quantitative data, then preparing, conducting, and reducing the data into titles through a process of coding, and finally discussing how the quantitative results support the qualitative result. (Niure, 2018, p. 273). After collecting the data and information, the researcher tabulated them into different groups according to their nature. At first, the researcher analyzed the quantitative data obtained through a questionnaire by using a table and simple statistical tools (mean, percentile, and Chi-square test at .05 level of significance). The mean was used to find the average perception of the student towards the statement, and the chi-square value gave the significant (positive or negative) perception of the student towards each of the statements of the internal assessment system. Similarly, the qualitative data obtained through interviews was divided into five categories (themes) such as group work, participation and presentation, home assignment, class test, and an overall

review of the internal assessment system. The raw data was analyzed and discussed in relation to the above category or theme.

Ethical Consideration

In any kind of research involving the person, special attention should be paid to the person's rights, dignity, freedom, and privacy (Khanal, 2019, p. 181). The researcher considered some ethical considerations in this study, such as the researcher distributing the questionnaires to the students only with the permission of the department head of the research site. The researcher had not collect the data for his own gain and benefit. Respecting the diversity of the campus, the researcher had collect the data in an unbiased manner. The researcher will not publish the names and addresses of participants in the statistics without their permission. The researcher used comfortable language in the data collection process that is easily understood by the participants.

Chapter IV

Analysis and Interpretations of Data

This chapter deals with meaningful analysis and interpretation of numerical and non-numerical data about "Student Perception Towards the Internal Assessment in Semester System". The Collected quantitative data were tabulated and analyzed manually in excel and qualitative data were analyzed with a thematic approach. The data were divided into five groups (Themes) they are Group assignment, Participation and Presentation, Home assignment, Class test, and Overall review of an internal assessment system. Frequency percentage and chi-square test were calculated (See Chi-square test on Appendix D). Moreover, mean, percentage, and chi-square test at 0.05 level of significance were used to analyze the data. To achieve the objective of my research, 110 students were selected by stratified sampling and they were studying M. Ed. under the 2019 batch of T.U. and 6 students for an interview with the same batch. The name of the six students is Respondent A, B, C, D, E, and F respectively. The interview guidelines were prepared after analyzing the quantitative data. The collected data were analyzed under the following topic corresponding to my objective;

- Group work
- Participation and Presentation
- Home assignment
- Class test and
- Overall review of the internal assessment system.

Group Work

Group work is very essentials parts of our internal assessment system because we did lots of group work while studying all semester. We did the presentation in the

group, we did home assignment in the group, and we present in the classroom. So group work is not mentioned in our syllabus but we did lots of group work. So group work is one aspect of our assessment. Here I first analyzed the quantitative data related to group work and then qualitative data and joined them on the topic and related statement. Statements one to six are related to Group work and the result are in table 4.1 as below:

Table 4.1: *Students' Response on Group Work.*

Statements	SA%	A%	U%	D%	SD%	Mean	χ^2	De
1. Group work is helpful for learning mathematics.	60.9	36.4	2.7	0	0	4.55	152.05	S
2. Group work is conducting as per our syllabus.	17.3	60	13.6	8.2	0.9	3.83	107.62	S
3. Student are fully responsible to do the group work.	22.7	47.3	16.4	9.1	4.5	3.72	56.23	S
4. Teachers are fully responsible towards the conducting group work.	20.9	40.9	21.8	15.5	0.9	3.67	41.30	S
5. Personal assessment is more effective then group work assessment.	21.8	35.5	20	20	2.7	3.55	27.14	S
6. Group work should be remove and keep only personal assignment to	9.1	23.6	17.3	31.8	18.2	2.76	14.08	S

assessment.

Aggregate mean 3.68

SA= Strongly Agree, A= Agree, U= Undecided, D= Disagree, SD= Strongly Disagree, De = Decision, S = Significant, NS = non-significant, and χ^2 - test on .05 level of significance with 4 degree of freedom. ($\chi_{.05, 4}^2 = 9.49$)

Table 4.1 shows the different statements related to 'Group Work'. The aggregate mean is 3.68 which is greater than the natural mean i.e. students are positive towards the group work. The first statement "Group work is helpful for learning mathematics" has mean score 4.55 which is almost 5 so maximum students are strongly positive towards group work (collaborative learning) for learn mathematics. This shows that group work is the most useful method for learning mathematics because 60.9% of students strongly agreed with this statement and no one disagreed with this statement. The calculated value of chi-square ($152.05 > 9.49$) is significant and 60.9% of students are strongly positive. So this statement is positive statement and students wants more group work in mathematics education. When I asked the question "Group works is helpful to learn mathematics?" to all the respondents and then it can be seen that all the respondents are mostly similar things or responses in this question as "Yes obviously, because in group work we can exchange idea, technique, method, etc. so group work helps us to learn mathematics".

Similarly, the statement " Group work is conducted as per our syllabus" has mean score 3.83 which is positive, and more than 77% of students agreed with this statement but 8.2% of the student disagreed with this statement. That means 77.3% of students did not study the syllabus because in our syllabus there were not mention the

group work as specified. But the home assignment and presentation were done in the group. Exactly home assignment is also not mentioned in the syllabus but in the practice, home assignment is done in all subject. This tells us that students respond with practice-based experience. Chi-square value ($107.62 > 9.49$) is significant and 60% students are agreed with statement so, students are positive with statement. Like as above, the statement "Students are fully responsible to do the group work" has mean score 3.72 which is also positive and chi-square value is ($56.23 > 9.46$) significant and 70% of students are strongly agreed and agreed. This value indicates us that students are fully responsible to do group work. On this statement, 13.6% of students are showing their dissatisfaction with this statement. This shows that 13.6% of students are highly expecting teacher guidance while doing group work similarly 16.3% of students also choose the neutral option so they also need teacher guidance. On this statement, 70% of students knowingly or unknowingly choose the positive option. So this data makes me feel "how it could be happening" so I asked the students in the interview "*Can we do group work without teacher guidance?*" In this question student replied as below:

"Of course, but if we get teachers' help then the group work gives the better result". (Respondent- C, November 9, 2022)

"When we got the assignment in the group then we discussed it with each other, search in google, study the related materials, etc. and submit to the teacher. And we got the marks according to our work". (Responded- B, November 9, 2022)

From this answer which I got from my interviewee, students were responsible to do group work and they can do such type of work taking the help of other

resources. So if we discuss the problem with our teacher then it is easy to find the solution/result.

Similarly, the statement "Teachers are fully responsible for conducting the group work" has mean score 3.67 which indicates that teachers are responsible to conduct the group work. This average score is supported by chi-square value ($41.30 > 9.49$), which is significant. Student response to this statement is 20.9% strongly agree, 40.9% agree, and 21.8% neutral. This shows that 61.8% of students are doing group work under the teacher's guidance which is beneficial for the student. But 15.5% of students disagreed with this statement so 15.5% of student wants to guide by the teacher/supervisor. Statements 3 and 4 have the almost same number of dissatisfied students. On both statement the chi-square value is significant but not much significant as statement 1 and 2. So the group work could be conducted under teacher supervision. On this statement, the students respond in the interview is usually teacher give different work for different group and we did it under the teacher's guidance and present in the classroom.

The fifth statement "Personal assessment is more effective than group work" has mean score 3.55 which is also greater than the natural mean and it indicates that personal assignment is also good to learn mathematics as well as assessing the student. Because the chi-square value ($27.14 > 9.49$) shows that statement is significant and 57.3% of students are agreed so, personal assessment is more effective than group work assessment. And similarly, only 21.8% of students strongly agreed with this statement, and 35.5% of students agreed with this statement so 58.3% of students want to assess personally rather than the group. And 20% of students are undecided and 20% of students have disagreed so only a personal assignment system is not enough to assess mathematics. In the interview with the student, I asked all

respondents *"Does personal assessment is more effective than group assessment?"* Then they replied as follows:

"Group work is a very good idea for sharing knowledge, but we are being irresponsible some active friends did the assignment and others support them". (Responded- B, November 9, 2022)

"In the first semester, the teacher divide work among all individual and combine all personal work and submit it to the teacher then our teachers evaluate the work personally. In my point of view, this is a good idea for assessment. But in the other semester, everything is not going as in the first semester". (Responded- E, November 10, 2022)

Again, I asked them *"After the first semester you did not do group work?"* Then all students replied the same thing, as *"we did but not as in the first semester"*.

The last statement of group work *"Group work should be removed and keep only personal assignment to assessment"* has mean score 2.76 which indicates that students are not agreed with this statement and group work is essential for evaluating the students. Similarly, the chi-square value ($14.09 > 9.49$) is just greater than table value. That means the statement is significant with low degree of positive-ness and it signifies that group work should not be removed from assignment. Because 66.3% of students have disagreed view on this statement. On this statement, 31.8% of students choose the disagree option, and 18.2% of students choose the strongly disagree option which shows that group work is better than personal assignment to assessment.

The overall numerical data indicates that group work is a very useful way of learning mathematics and assessing the achievement of students in mathematics. The quantitative and qualitative data indicate that students were not satisfied with group

work as a tool for internal assessment of mathematics at the University. One thing that is very important to notice is that all respondents from all sample colleges always say, in the first *sem* (semester) we did group work in a very practical way but in the other semesters, we did not follow the rule which, we follow in the first semester. On this group work topic, all students said that 'giving the assignment to the group and assessing personally is very effective.

According to Michelle & Smits (2017), The social constructivism theory focuses heavily on dyads (Johnson & Bradbury, 2015) and small groups. For instance, students learn primarily through interactions with their peers, teachers, and parents, whereas teachers stimulate and facilitate conversation by harnessing the natural flow of conversation in the classroom (Powell & Kalina, 2009). From this article, small groups play a vital role in the learning process. The group would be family members, peers, classmates, etc. and they learn from society. Here we discuss about mathematical society. Our classroom is also one kind of society so in this society, we can learn mathematics through group work. From a theoretical point of view learning through group work is a good way of transforming knowledge. So, group work plays a vital role in the learning process this implies that we can assess the student through group work. One example of group assessment is our Lok Sewa Ayog (Public Service Commission). Because those who want to be public servants an officer's level then they should pass the group test (Public Service Commission-2019).

Participation and Presentations

Participations and Presentations is the second heading of my research work. In our semester guideline 80% participation is compulsory and for education student presentation is also compulsory. On this note I want to know that what is the practicing situation of participation and presentation on the classroom. This heading

contains six statements from 7-12. The result of student responses is presented on table 4.2 as follows:

Table 4.2: *Students' Response on Participation and Presentations.*

Statement	SA%	A%	U%	D%	SD%	Mean	χ^2	De
7. Participation and Presentation is compulsory for internal assessment.	43.6	46.4	8.2	0.9	0.9	4.33	106.14	S
8. Presentation is very useful tools for developing the teaching skill.	64.5	26.4	5.5	1.8	1.8	4.51	144.70	S
9. Presentation with PBL is more effective.	38.2	40.9	11.8	7.3	1.8	4.05	66.39	S
10. Presentation is less effective for some subject.	11.1	35.2	25	24.1	4.6	2.88	29.46	S
11. Immediate feedback helps to the student to know the student mistake before it's too late.	42.7	44.5	8.2	3.6	0.9	4.25	94.31	S
12. I can't learn anything without present in classroom.	12.7	16.4	28.2	30	12.7	3.03	14.34	S
Aggregate mean						3.84		

SA= Strongly Agree, A= Agree, U= Undecided, D= Disagree, SD= Strongly Disagree, De = Decision, S = significant, NS = non-significant, and χ^2 - test on .05 level of significance with 4 degree of freedom. ($\chi_{.05, 4}^2 = 9.49$)

From table 4.2 the statement "Participation and Presentation is compulsory for internal assessment" has mean score 4.33 which indicates, students are fully agreed with this statement. This ensures that participation and presentation are major aspects of mathematics education. This data claim that, our syllabus is correct. On this statement, 43.6% of students strongly agreed and 46.4% of students agreed this shows that 90% of students are enjoying the classroom. Similarly, the chi-square value ($106.13 > 9.49$) gives the greater degree of significance with 90% positive-ness. This data tells us discipline learning is good because coming into the classroom, and actively participating in the presentation is in student favor and only nearly 1% of students disagreed with this statement. So, from the above numerical data, we can say participation and presentation have a big space in learning mathematics and internal assessment. So, students want to participate in the classroom and they want to develop presentation skills as well.

Like as the statement "Presentation is a very useful tool for developing teaching skills" has mean score 4.51 which is stronger than the above statement. Statement 7 and 8, both significant but statement 8 is much stronger than statement 7 because the chi-square value of statement 8 is ($144.7 > 106.14$). So, in the field of education and to be a good teacher at school, classroom presentation is essential. Because 64.5% of student has a very strong perception on the statement and 26.4% of student has a positive view on this statement and only 2% of student has a negative perception. From this information, 80% of classroom participation is very good and

should be follow always. On this topic, I asked to the student *"What is the role of presentation in the teaching field?"* On this question, the students replied as follows:

"We are in the teaching field and M.Ed. & B.Ed. courses are the pre-service courses of a teacher. Teachers always present his/her experience in front of the classroom. So, it should be compulsory". (Responded- A, November 8, 2022)

"Anybody can be a teacher but a good teacher has to have presentation skills". (Responded- C, November 9, 2022)

"When I was in the first semester, even I can't stand in front of my class but today I can present any topic in front of the class. In this sense, classroom presentation develops my presenting skill. So, it is good and we should practice maximum time in the classroom". (Responded- F, November 11, 2022)

From this response, classroom presentation is good for learning and it should take a permanent place in the internal assessment system.

Similarly, the statement "Presentation with PBL is more effective" has mean score 4.05 which is greater than the neutral score and chi-square value ($66.39 > 9.49$) indicates, the statement is significant with 79.1% of students are positive with this statement. Which tell us students are interested to do assignment in the PBL format. On this statement, 38.2% of students are strongly agreed with this statement which means they are very much interested in this type of topic (PBL) and want to explore the new knowledge and 40.9% of students have a positive view of this statement which means 79.1% students agreed with PBL and only 7.3% of students are not interested with this statement 1.8% of students are disagreed with this statement. From the analysis of this statement, students want to find the socially associated

problem and solutions. When we discuss the term PBL in the interview then all student responds as we later know the PBL method of learning in the third semester. After that we search it on google then we find that PBL is fully applied in developed countries as an assignment. So like mathematics subject, we have to follow the PBL technique for assignments and we can assess students through this method.

The fourth statement of this cluster "Presentation is less effective for some subjects" has mean score 2.88 and it is a negative statement so students have disagreed with this statement. That means the presentation is not less effective for all subjects rather than it is equally effective for all subjects. On this statement, 11.1% of students strongly agreed and 35.2% of students agreed which means 46.3% of students say that presentation is not equally fit in all subjects it is useful in the chose-able subject. The chi-square value ($29.46 > 9.49$) is significant and the response rate is 50-50 so, it signifies to us that presentation is effective on choose able subject. Similarly, 25% of students are neutral and 24.1% of students disagreed with this statement and 4.6% of students strongly disagreed which means 28.7% of students say that "Presentation is equally effective for all subjects". On this statement, the student gives a 50-50 result so teachers could take their decision as per as contents of the subject.

Like above, the next statement "Immediate feedback helps the student to know the student's mistake before it's too late" has mean score 4.25 which is also positive. The chi-square value ($94.31 > 9.49$) shows the positive-ness of this statement i.e. the statement is significant. This indicates that immediate feedback is helpful to the student. In this statement, 42.7% of students strongly agreed and 44.5% of students agreed so 87.2% of students agreed with this statement. These numerical values signify to us when students make mistakes and immediately correct them by the

teacher, is the best and fast way of learning. When we discuss this topic in the interview all student says "*Of course, Immediate feedback helps to correct student mistakes on time*". The last statement of the participation and presentation cluster is "I can't learn anything without present in the classroom" has mean score 3.03 which indicates that students are neutral on this statement. This statement is just significant with chi-square value (14.34>9.49) but not stronger as above statement. That means the student can learn inside the classroom and outside the classroom. On this statement, 30% of students disagreed. So, the student can learn the subject matter without being present in the classroom.

After analysis, the data which is mentioned in table 4.2 and discussed in the interview held in November 8, 2022 to November 11, 2022 indicates that participation and presentation have a very important role in the field of education. To be a good teacher presentation skill is necessary. According to Muthusamy (2019), Presentation skills help to create innovative ideas when students come up with creative and interesting slides to illustrate their task. The use of presentation aids makes for a much more interesting talk, and the creation of such aids can help develop students' confidence. According to social constructivist learning theory, every child learns from society and expresses themselves in society so presentation is an important part of learning. According to Sharma & Sharma (2012, p. 202), on the heading of 'common elements of constructivist perspective'. Learning is an active and interactive process. Learning depends on learners' active participation and active interaction. Learning depends on student pre-knowledge and interaction. So, from the social constructivist point of view learning always occur in a learner's mindset or their active presence in society.

Home Assignment

Home assignment is my third heading of research work. It is a type of exam which is done in home and submit to the teacher. In class test (exam), time is very limit but in-home assignment time is longer then exam so student get more opportunities to expand knowledge. On the note of this, statement 13-18 represent the home assignment section of questionnaire set. The result of student response on this topic is presented on table 4.3 as follows:

Table 4.3: *Students' Response on Home Assignment.*

Statement	SA%	A%	U%	D%	SD%	Mean	χ^2	De
13. Student gets more time and sources to learn.	24.5	57.3	11.8	5.5	0.9	4.04	102.69	S
14. There was plagiarism (copy-paste) system in home assignment.	15.5	42.7	22.7	13.6	5.5	3.62	39.70	S
15. Home assignment should be strictly personal rather than in group.	19.1	44.5	20	15.5	0.9	3.77	49.31	S
16. All student submits the home assignment within time.	19.1	35.5	15.5	25.5	4.5	3.47	26.64	S
17. Home assignment is only for internal assessment.	12.7	36.4	20	24.5	6.4	3.38	26.37	S
18. I never re-submit the home assignment in college life.	12.7	17.3	20	28.2	21.8	3.32	6.55	NS
Aggregate mean						3.60		

SA= Strongly Agree, A= Agree, U= Undecided, D= Disagree, SD= Strongly Disagree, De = Decision, S = significant, NS = non-significant, and χ^2 - test on .05 level of significance with 4 degree of freedom. ($\chi^2_{.05, 4} = 9.49$)

Table 4.3 has six statements related to home assignment and in the internal assessment system, home assignment covers the 10% marks (In practice). The statement "Student gets more time and sources to learn" has mean score 4.04 which is positive and students are showing their positive view towards this statement. This statement is also significant means positive with chi-square value ($102.69 > 9.49$) and 81.8% of students are positive with this statement. This result indicates that student wants to learn themselves through the home assignment. On this statement, 24.5% of students strongly agreed and 57.3% of students agreed. This data tells us 81.8% of students are positive about the home assignment and nearly 6% of students have disagreed with the home assignment as a learning tool. In my point of view, the maximum number of students are positive with this statement because, in-home assignment student gets more time to search, and learn and gets full 10% marks on 40% marks (Practicing M.Ed. syllabus).

Similarly, the statement "There was plagiarism (copy-paste) system in home assignment" has mean score 3.62 which indicates that the students agreed with copying the home assignment and submitting it to the teacher. The chi-square value also supports the mean score because this statement is significant with numerical value ($39.70 > 9.49$). On this statement, 15.5% of students strongly agreed with copying and submitting the home assignment and 42.7% of students also agreed with cheating on the home assignment. Overall more than 50% (58.2%) of students have been doing this type of work and it is very bad. So, the student should be a little bit

sincerer to do home assignments and the teacher should give the personal home assignment to stop plagiarism. On this topic student replied as follows:

"Not done by all but some student does, which is the student's fault. Because home assignment is opportunities for expanding their knowledge but they are copying what they got?". (Responded- A, November 8, 2022)

"In our class, I experienced these things". (Responded- B, November 9, 2022)

"Yes! there is a little bit copy-paste system in the home assignment". (Responded- C, November 9, 2022)

"I don't know what other friends do but I never copy the home assignment. Whatever I know I write and unknown things are searched from google and YouTube. Learn from there and submit". (Responded- E, November 10, 2022)

"If the teacher gives a different assignment to an individual then there is no chance of plagiarism". (Responded- F, November 11, 2022)

From this answer, the home assignment should be individual. The home assignment may be in group but the assessment should be strictly personal. Because in above statement on group work cluster, students are positive with group work to learn the mathematics.

Like above, the statement "Home assignment should be strictly personal rather than in group" has mean score 3.77 which indicates that students are not interested to copy the home assignment. In this statement, only 16% of students are doing home assignment without copy-paste because they disagreed with this statement. Responses on statements 13 and 14 are matched because more than 50% of students are doing copy-paste and a similar numbers of students want the personal assignment. So, if teachers give personal assignments as home assignments then automatically stop the plagiarism system. Another statement related to submission "All students submit the

home assignment within time" has mean score 3.47, which shows that students submit the home assignment on time. But 25.5% of students disagreed and 4.5% of students strongly disagreed so 30% of students don't submit the home assignment on time or they know their friends who did not submit the home assignment on time and 15.5% of students are neutral this shows that sometimes they submit the home assignment in time and sometimes they don't submit in time. On this statement my responded response in the interview was;

"No! No! No! not 30%, 70% of students don't submit the home assignment in time only 30% of students submit within the time frame". (Responded- E, November 10, 2022).

This data shows that students are cheating on attitude scale tests. So, I feel, for the investigation of ground reality. The interview is very important for the ground reality and it gives the real answer.

Similarly, the statement "Home assignment is only for internal assessment" has mean score 3.38, which is positive but just more than neutral score so, it is good because the home assignment is not for only internal assessment it gives the opportunity of expanding the knowledge with the help of the teacher. This statement is significant with chi-square value ($26.37 > 9.49$) and 50.9% of students are undecided and disagreed so chi-square values signifies to us that home assignment is not only for internal assessment. In this statement students have mixed responses, only 12.7% of students strongly agreed and 36.4% of students agreed with this statement. That is only 49.1% of students are doing the home assignment for only internal assessment and more than 50% of students are doing the home assignment for expanding their knowledge.

From table 4.3 the statement "I never re-submit the home assignment in college life" has mean score 3.32, this is a little bit more than the neutral mean so on this statement student just agreed with not submitting the home assignment again and again. This statement is non-significant with chi-square value ($6.55 < 9.49$). This statement is negative statement so that student re-submit the home assignment. On this statement, 12.7% of student never re-submit the home assignment, and 17.3% of the student also do not re-submit i.e. 30% of students does not re-submit the home assignment. It opens many options for us e.g. they don't submit in time so they don't get the revision opportunities, the teacher does not give them to doing again and again, etc. Similarly, 20% of students are neutral and 28.2% of students disagreed which means 28.2% of students re-submit the home assignment. But 21.8% of students strongly disagreed with this statement so 21.8% of students are submitting home assignments again and again. In this section, we discuss about feedback on assignments and students have different views on re-submitting assignments only respondent-A & C agree with re-submitting home assignments and all other respondents don't re-submit the assignment and don't get feedback on all subjects.

From table 4.3 has the aggregate mean score is 3.6 which indicates that students are not satisfied with conducting the home assignment. In-home assignments there are some block holes from the teacher's and student's side. On this topic student answer as follows:

"Home assignment is very good for our internal marks because we got more than 7 marks out of 10 marks". (Responded- A & B, November 8-9, 2022)

"We are active in the classroom and we did all assignments then passive student requested us to see the hint of the assignment and copied all our content and some content add from their side and got internal marks more

than ours, that is a very dissatisfying moment for me". (Responded- D, November 10, 2022)

"In some subjects, we got an individual home assignment and we got feedback also. Hope this system is implemented in all subjects". (Responded- E, November 10, 2022)

"Maximum student start doing an assignment in the eleventh hour of submit date and submit without hitting minimum criteria". (Respondent- F, November 11, 2022)

According to Stallard, (2020), Home assignments are an extension of the clinical session and as such need to relate to the session content, the problem formulation, and the young person's goals. The home assignment gives times to student to consolidate their knowledge for a long time. At the master level, the area of study will be wider so we can't cover all the areas in the classroom, in such a situation the homework does work. According to the Glossary of Education Reform (2022), formative assessment refers to a wide variety of methods that teachers use to conduct in-process evaluations of student comprehension, learning needs, and academic progress during a lesson, unit, or course (Johnson, 2018). Formative assessment helps students learn while they are doing homework. Homework is one important factor of formative assessment. Internal assessment is also a formative assessment. So, homework plays a vital role in internal assessment. The social constructivist theory also suggests that maximum engagement in the learning fields helps to solidify knowledge. In the Home-assignment student gets more time to complete the assignment. So, homework is important in internal assessment.

Class Test

Class test is the fourth heading of my research work. It is a main factor of internal assessment. In our syllabus there are three assignments/assessment. Among them we are practicing two class test and one home assignment. So, class test contains 50% marks out of 40 marks. That's why there are six statement from 19-24 represent the student view towards the class test. The result of student response is presented as below on table 4.4.

Table 4.4: *Students' Response on Class Test.*

Statements	SA%	A%	U%	D%	SD%	Mean	χ^2	De
19. Class test is conducting in summative manner.	9.1	54.5	24.5	8.2	3.6	3.71	86.92	S
20. Teacher gives so many chances to upgrade the internal marks.	17.3	41.8	21.8	17.3	3.6	3.60	34.34	S
21. Class test is done only two times in every subject.	10.9	33.6	22.7	25.5	7.3	3.33	23.33	S
22. Class test is done only one time before the board exam.	11.8	31.8	12.7	33.6	10	3.20	27.36	S
23. Class test and board exam question are almost same.	7.3	22.7	18.2	30.9	20.9	2.88	14.57	S
24. Maximum number of class test give the better result in formative evaluation.	18.2	57.3	10.9	10	3.6	3.92	92.32	S
Aggregate mean						3.43		

SA= Strongly Agree, A= Agree, U= Undecided, D= Disagree, SD= Strongly Disagree, De = Decision, S = significant, NS = non-significant, and χ^2 - test on .05 level of significance with 4 degree of freedom. ($\chi^2_{.05, 4} = 9.49$)

Table 4.4 consist of six statement related to the class test from statement number 19 to 24 and the aggregate mean of these six statements is 3.43 which is positive. From this aggregate mean, we can say that students are positive with the class test but not satisfied. Because the statement "Class test is conducted in a summative manner" has mean score 3.71 which is positive in terms of the statement but negative in terms of application. The chi-square value ($86.92 > 9.49$) is significant and 54.5% of students are positive with statement so, this statement is positive. Because the class test should be conducted in an as formative manner. On this statement, 9.1% of students are strongly agreed and 54.5% of students are agreed so in total 63.6% of students accept that the class test was conducted in a summative manner so authorities should think about it and conduct it in a formative manner. On this statement responded A & B replied:

"In our class, an internal exam is conducted according to the syllabus i.e. one mid-term exam, one home assignment, and one last-term exam. But in the compulsory subject, there is only a home assignment and one pre-board exam". (November 8-9, 2022)

Respondents C & D answer me:

"What type of class test do you mean? I don't know, but in our class, we did the assignment and final exam, I remember in a few subjects we took the exam in the classroom but not enough". (November 9-10, 2022)

Respondent E & F replied;

"In our college, we take a 3-hour pre-board exam before the board exam. I don't know what other class test has happened". (November 10-11, 2022)

From this point of view, there were practicing different techniques to assess student achievement. Different colleges have different models. But all college comes under the same dean's office so authorities should apply the same model to assess student achievement.

Similarly, another statement "Teacher gives so many chances to upgrade the internal marks" has mean score 3.6 which is positive and helps students to upgrade their marks as well as knowledge. This statement is significantly positive with chi-square value ($34.34 > 9.49$) and 59.1% of students are agreed with this statement. Which is positive from the student's perspective. On this statement, 17.3% of students strongly agreed and 41.8% of students agreed with this statement which means 59.1% of students are getting a chance to upgrade their internal marks through the class test. 21.8% of students are neutral and 17.3% of students disagreed with this statement and 3.6% of students strongly disagreed with this statement so 20.9% of students are not getting much chance to upgrade their internal marks. So, I request all the subject teachers to give such type of chance to the student in the class test which helps to upgrade the internal marks. On this statement, all respondents in the interview told me that *"we did not get enough feedback in all assignments"*.

On another statement "Class test is done only two times in every subject" has mean score of 3.33 which is positive for this statement but not positive for the student. The chi-square value 23.33 is significantly positive towards the statement but negative towards the student learning process. Because if a class test is conducted two times in the semester then how to upgrade the knowledge through feedback? So, there should be conducting so many class tests in every semester that will help to upgrade the

student knowledge and marks. In this same statement, 10.9% of students strongly agreed and 33.6% of students agreed so 44.5% of students agreed with conducting the class test two times in every semester. And 22.7% of students are neutral, 25.5% of students disagree and 7.3% of students are strongly disagreed so only 32.8% of students are taking the class test more than two times every semester. On this statement students, E & F responded; *"I don't know any class test but we took the pre-board exam as a final exam with the full schedule"*. My perception of this statement is that every student gets to chance to take many class tests every semester.

And another statement "Class test is done only one time before the board exam" has mean score 3.20 this is just more than the neutral score which means students are not agreed with this statement. But in some college and some subjects, this is not good because 11.8% of students strongly agreed with this statement and 31.8% of students have also the same view so 43.6% of students give a positive view to this statement which means 43.6% of class test was done only one time before the board exam. Similarly, 12.6% of students are neutral, 33.7% of students disagreed and 10% of students strongly disagreed so 43.7% of students are taking several classes test before the board exam. Chi-square value 27.36 is significant towards the disagreed options. Because 43.6% of students have negative perception on this statement. Which is positive towards the statement but not positive with the applications. This shows that class test was conducted several times on some subject and only once a time on some subject. In this statement respondents, A & B argue that *"In major subject, we took two class test as internal exam and in compulsory we took the one-time exam before board exam"*. Responded C & D has a very confusing argument, there was no procedure for conducting the internal exam. This all things (internal exam) depends on the subject teacher. Responded E & F argue that *"we are practicing*

one pre-board exam in all subjects and all semester but the class test is practicing in few subjects".

According to Paul (2015), Research in cognitive science and psychology shows that testing can be an effective way to learn. Taking tests can produce better recall of facts and a deeper understanding than an education devoid of exams. This article shows that maximum test makes knowledge stronger and avoid the fear of exam. Conducting several class tests increases the student's knowledge and confidence, so all teachers should conduct the class test many times.

Similarly, the fifth statement of this topic "Class test and board exam questions are almost the same" has mean score 2.88, which is below the neutral value so it indicates us that there is no correlation between class test and board exam question. On this statement 7.3% of students strongly agreed, 22.7% of students agreed, 18.2% of students are neutral, 30.9% of students disagreed and 20.9% of students strongly disagreed so 51.8% of students have a negative perception of this statement. The chi-square value 14.57 is significant and 51.8% of students have negative perceptions towards this statement. Thus, this statement indicates us, there is no relation between preparing the class test question and the board exam question.

The last statement of this topic is "Maximum number of class tests give the better result in formative evaluation" has mean score 3.92, which indicates that for a better result of internal assessment, the maximum class test should be conducted. The chi-square value (92.32>9.49) also supports the mean score. On this statement 18.2% of students strongly agreed, 57.3% of students agreed, 10.9% of students are neutral, 10% of students disagreed and 3.6% of students strongly disagreed. This shows that 75.5% of students are positive and only 13.6% of students are not positive so the maximum number of the class test gives a better result in internal assessment

(formative evaluation). This data tells us that maximum exams enhance student achievement.

From table 4.4 the aggregate mean score is 3.43, which is almost four that's why students are satisfied with the class test. On these six statements all statements have significantly positive through chi-square value. The chi-square value is interpreted as, the greater the calculated value than 9.49 has greater significant and nearer the calculated value of chi-square with 9.49 has less significant. Statements 19 and 24 have greater numerical value then tabulated value so these two statements have greater significant than other statements. So, the class test should conduct in formative way. Because class test helps all the students to recover the mistake in subject matter and writing skill.

Overall Review of Internal Assessment

Overall review of internal assessment is the last heading of my study. On this topic we discuss overall assessment system independently other than group work, home assignment, participation and presentation and class test. On this heading I discussed about administrative depart, engaging authorities, student view etc. Statements 25-30 represent this section. Students' response on this topic/heading is presented on table 4.5 as follows:

Table 4.5: *Students' Response on Overall Review of Internal Assessment.*

Statements	SA%	A%	U%	D%	SD%	Mean	χ^2	De
25. Honestly, I know all the component of internal assessment system of our syllabus.	19.1	50	18.2	10.9	1.8	3.96	65.91	S
26. We follow all the	20.9	53.6	14.5	10	0.9	4.05	81.25	S

component of assessment in all semester.								
27. I like home assignment rather than class test.	13.6	44.5	19.1	20	2.7	3.68	47.31	S
28. Internal assessment system should be revise.	20	54.5	15.5	8.2	1.8	4.01	84.05	S
29. Personal biasness still exists while conducting the internal assignment.	15	49	19	10	7	3.73	56.80	S
30. Authorities are making own internal assessment system as per as their easiness.	13.4	50.5	19.6	13.4	3.1	3.74	65.16	S
Aggregate mean							3.86	

SA= Strongly Agree, A= Agree, U= Undecided, D= Disagree, SD= Strongly Disagree, De = Decision, S = significant, NS = non-significant, and χ^2 - test on .05 level of significance with 4 degree of freedom. ($\chi^2_{.05, 4} = 9.49$)

From above Table 4.5, the statement "Honestly, I know all the components of the internal assessment system of our syllabus" has mean score 3.96, which indicates that the maximum number of students knows all the components of the internal assessment system. The chi-square value is 65.91, which is greater than 9.49, so this statement is significantly positive with 69.1% positive response. On this same statement, 19.1% of students strongly agreed, 50% of students agreed, 18.2% of students were neutral, 10.9% of students disagreed, and 1.8% of students strongly disagreed with this statement. So, 69.1% of students are aware of all the components of the internal assessment, and only 12.7% of students are not aware of all the

components of the internal assessment. To make this statement more clear, I asked the same question to the students, and they replied as follows:

"Yes, I know all the components of our assessment. It is like hajiri (present in the classroom), presentation, one home assignment, and two class tests." (Respondent: A, November 8, 2022)

"Honestly speaking, I don't know all the components and guidelines of internal assessment." (Respondent: B, November 9, 2022)

"I think participation, presentation, home assignment, and two class tests. Write?". (Respondents: C and D, November 9-10, 2022)

"I don't know all the components of internal assessment, but what we are practicing here is a little bit of presentation, some assignments, and one pre-board exam." (Responded-E, November 10, 2022)

From the analysis of the numerical data and the answers of the student, we can say that the guidelines of the internal assessment system were not properly disseminated. So, first of all, we should properly disseminate the whole system of internal assessment to all the students, and the students themselves should be aware of it.

Similarly, another statement, "We follow all the components of assessment in all semesters," has mean score 4.05, which signifies to us that the maximum number of students believe that they follow all the components of internal assessment. On the same statement, 20.9% of students strongly agreed, 53.6% of students agreed, 14.5% of students were neutral, 10% of students disagreed, and 0.9% of students strongly disagreed. This indicates that 74.5% of students believe that they were following all the components of internal assessment in the semester, although they do not know the components. The chi-square value of $81.21 > 9.49$ also justifies that all the students

follow all the components of internal assessment. Similarly, nearly 11% of students do not believe that they are following all the components and guidelines of internal assessment. This numerical data shows us some students do not know all the components of internal assessment, but they are following all the guidelines, which means they are believing the teacher and administration. When we talk about this topic, the students' responses were as follows:

"Without any lie, we follow all the rules and regulations of the semester system in the first semester, but in the next semester, nobody cares about all the components. How much we did in the first semester, we did not do in the second, third, and fourth." (Responded: A, November 8, 2022)

"In my experience, we did all the work in the first semester, but in the second and third semesters, we did not. But we're hearing that we did everything we could in comparison to other colleges." (Responded: B, November 9, 2022)

"We follow all the components in the first semester, but in the second, third, and fourth semesters, due to the pandemic situation, we can't follow all the components because our university can't run the classes." (Responded: C, November 9, 2022)

"In my experience, only 30% of students follow the teacher's instruction." (Responded: E, November 10, 2022)

From the above information, students are not fully satisfied with following all the components of the internal assessment system for the semester. Because only 75% of students think that they follow all the components, and nearly 11% of students think that they are not following all the components. So, I strongly recommend to all the stakeholders, like the teacher, student, administrative department, etc., to implement all the components of internal assessment in all semesters.

As mentioned above, the third statement of this section, "I like home assignment rather than the class test," has mean score 3.68, which indicates that most of the students like homework. The chi-square value 47.31 also signifies the positiveness of the statement. This is a sign of laziness because exams develop confidence, which increases the student's personality in a hard-working manner. Confidence comes from knowing that you are perfect at what you do. During exam time, many students become stressed about their exam performance, and they work hard to try to give their best performance. When students get good grades, it boosts their confidence levels and makes them motivated to study hard (Irshad, 2022). On the same statement above, 13.6% of students strongly agreed, 44.5% of students agreed, 19.1% of students are neutral, 20% of students disagreed, and 2.7% of students strongly disagreed, so if we add neutral students, then 41.8% of students want to take a maximum examination, which is very good from the above blog post.

Heading to the fourth statement, "Internal assessment system should be revised," has mean score 4.01, which is strongly positive, so students want to revise the internal assessment system of Mathematics Education at TU. The chi-square value 84.05 is significantly positive because 74.5% of students are positive with this statement. Students response on this statement is 20% strongly agree, 54.5% agree, 15.5% neutral, 8.2% disagree, and 1.8% strongly disagree. This data indicates that 74.5% of students agreed to revise the internal assessment system, and only 10% of students support the ongoing process. So, I want to know which aspect should be revised, and then I asked the student, "*How could we improve the internal assessment system?*" Then the students replied as follows:

"If we follow all the guidelines of the internal assessment system, which we did in the first semester, for all semesters, then there is nothing to do; it would be good." (Responded: A and B, November 8-9, 2022)

"We studied B.Ed. in the yearly system, and the semester system is a new concept for us, so, first of all, disseminate it to all the students and conduct the orientation program for all the teachers and administrative representatives, then the assessment will be automatically improved." (Responded: C, November 9, 2022)

"If all students, teachers, and authorities are to be very sincere, then the internal assessment system takes place." (Responded: D, November 10, 2022)

"If we stop over politicizing in our college, internal assessment system will return to normal form." (Responded: E & F, November 10-11, 2022)

From the above student's response to my question, the internal assessment system is affected by COVID-19. After COVID-19, the situation changed, and the internal assessment was not conducted as per our syllabus. But in the first semesters, the internal assessment was conducted as per our syllabus and internal assessment guidelines.

The fifth statement in this cluster, "Personal biasness is still exists while conducting the internal assignment," has mean score 3.73, which indicates that there are still personal biases. The numerical value of the chi-square test ($56.80 > 9.49$) also indicates that there is still bias toward the students. This is proved through the student response to this statement, 15% strongly agree, 49% agree, 19% are neutral, 7% disagree, and 3% strongly disagree. On this statement 64% of students agree that personal biases exist while conducting the internal assessment through the

assignment, only 10% of students oppose the statement. When I asked the student,

"Are there any personal biases in assessment?" Their response was:

"Not for all subjects, but I have heard that in some subjects, sir adds 2-3 marks in internal marks when our friends request for sir to give more marks."

(Respondents A and B, November 8-9, 2022)

"Some friends are very passive in the classroom, passive in presentations, did not do the assignment, etc., but in the end, they got the same marks as the active student got. I don't know how they got there". (Respondent: D,

November 10, 2022)

"Yes, there is. Some friends use political power." (Responded: E & F,

November 10-11, 2022)

There was mixed response to personal biases. In some colleges and some subjects, there are still personal biases, but in many subjects, there are no personal biases. So, I request all the respected teachers to free the internal assessment system from biasness and implement the same procedure for all students.

The last statement of my research, "Authorities are making their own internal assessment system as per their easiness," has mean score 3.74, which is greater than the neutral score. That means authorities are using their power in the wrong place, or there are biases between authorities and other teachers. The chi-square value of $65.16 > 9.49$ also supports the above argument. On this statement, student responses are 13.4% strongly agree, 50.5% agree, 19.6% neutral, 13.4% disagree, and 3.1% strongly disagree. This numerical value indicates that 63.9% of students support this statement. That means the authorities were not following the regulations of the internal assessment system. Only 16.5% of students argue that authorities were also

fair. I asked the student in the interview, "*Do authorities follow the rules of the internal assessment system like other teachers?*" Then students replied as:

"Ha! Ha! You already know what the authorities did to us, although you asked me. My answer is, authorities do not follow the rules and regulations of internal assessment." (Responded-B, November 9, 2022)

The same question I had asked to the respondents then it can be seen that all the respondents are mostly similar things or responses in this question as "In our college, every teacher has an individual rule".

This is the student view on the internal assessment system from three major colleges at Tribhuvan University. According to Behera (2017), "assessment" refers to the process of gathering pieces of information about learners' skills, abilities, and knowledge. It also provides feedback on students' performance to encourage them to further learn. Internal assessment is one main aspect of the overall assessment. Formative evaluation (assessment) has a place in today's school and university curricula. The paradigm of learning theory shifts from behaviorism to connectivism. Among them, social constructivism is one major theory of constructivism. According to Sharma & Sharma (2012, p. 201), social constructivism is based on collaborative learning. Collaborative learning means learning through exchanging ideas with each other. Social constructivist learning theories claim that students learn from social interaction, i.e., group work. This theory shows that students learn from each other, they can assist one another and co-construct knowledge. Student-teacher interaction is more effective at building knowledge than thought processes and cognitive structure (Bhattarai, 2017, cited in Bhusal, 2021).

Chapter V

Finding, Conclusion, Implication and Recommendation

This chapter includes a summary of the whole study. This chapter also contains findings and conclusions derived from the analysis and interpretation of both (quantitative and qualitative) data and finally recommends how these findings can be used in the academic and administrative fields. This chapter is concerned with the following sections:

- Finding of the study
- Conclusion of the study
- Implications of the study
- Recommendation for the further study

Findings of the Study

This study entitled "Student Perception Towards the Internal Assessment in Semester System" is a demanding topic of the semester system of T.U., Nepal. The main objective of this study was to explore the student perception of the internal assessment system in mathematics education and to analyze the improvement process of the assessment system in mathematics education. The approach of this study was explanatory-sequential (mixed-method). Thirty questionnaires about group work, participants and presentation, home assignments, class tests, and overall review of internal assessment which is related to the Likert five-point scale and interview guidelines were used as data collection tools. The respondents of this study were 110 students from three different colleges for the questionnaire and six students from the same three colleges for interview. The major findings of this study were as follows;

Group work

- This study found that students were very positive to learn mathematics through group work. And the same time they were not positive with assessment through group assignments.
- It is found that the assignment should be individual or group but the assessment should be strictly personal. For a passive student, group assignment is very fruitful to obtain marks but not knowledge.
- It is found that group work or group assignment was implemented in the first semester very well but did not follow on all the semester.

Participation and presentation

- It is found that 80% compulsory participation was not followed by all the colleges. In some college presentation was conducted similarly throughout the semester and all the subject. But in some colleges, students were very careless to do the presentation in the classroom.
- This study found that presentation is a very useful tool to develop teaching skills. By the vivid reason it is not implemented very well, they are student carelessness, teacher's carelessness, negligence able support of the administrative department, political power, student-teacher relation, etc.
- It is found that compulsory presentation in the classroom is very important for the education student.
- It is found that participants and presentations were affected by the pandemic situation.

Home assignment

- It is found that students were interested to do the home assignment. At the same time, plagiarism still exists in home assignments and teachers were not giving home assignments individually.
- It is found that home assignment is knowledge expanding factor of our assignment system.
- It is found that the maximum number of students did not submit the assignment on time.

Class test

- It is found that the internal exam is not conducted as per our syllabus. In some colleges, only the pre-board exam was conducted and, in some college the pre-board exam was conducted only in the compulsory subject. Some colleges were not conducting any internal exams in some semesters.
- It is found that the class test was not conducted properly.

Overall review of the internal assessment system

- This study found that only a few numbers of students were familiar with the component of the internal assessment of the semester system. And also, a few numbers of students were familiar with the component on a practice basis not on a theoretical basis.
- It is found that authorities were not properly disseminating the internal assessment system to all the students and the college.
- It is found that students' relations to the teacher affect their internal marks (assessment).
- It is found that students want every type of assignment but assessments would be individual.

- It is found that feedback is very poor in all components of assessment in all semesters. (students were not getting feedback on all assignments)
- It is found that students follow the rule, teachers are sincere, the administration supports both students and teachers, and the university conducts an orientation program for all the teachers, which will improve the assessment system in mathematics education.

Conclusion of the Study

When I was in school, mathematics is a very easy subject for me. When I was in +2 mathematics is a little bit harder than school mathematics because of language problems and a wider range of mathematical contents. When I was in my bachelor's degree (B.Ed.), mathematics is very harder because no one talked about mathematical knowledge but all the students talked about only marks. This marks-oriented college life is very annoying. When I listened to the semester system in the master's degree, very few students failed in the semester. Because there were different techniques of teaching as well as assessment. When I joined M. Ed first semester than I feel I am on right track. Because every student has a syllabus in hand. There was mention of the internal assessment through the assignment and other factors. But later on, I feel, we are not properly following the internal assessment system. Then I want to know the "Student Perception Towards the Internal Assessment in Semester System". And I studied this topic and the finding is mentioned above. From this finding, I concluded that students are very positive about the component of internal assessment but they are not positive about the process of an internal assessment system.

It is concluded that collaborative learning is very effective in mathematics learning. So, group work creates the space for collaborative learning. Group work is a very good way of assigning to the students but group assessment is not good for all

students. The group assessment system assesses all the students equally but very passive students got the same marks as the active student got. In the group work system if the teacher does not divide the individual work then active student learn more and more but passive student is always backward. So, for better learning and better result assess individually. This individual assessment motivates all the passive students. Moreover, the presentation is very helpful to the student of the education faculty. It helps to develop teaching skills. So, the subject teacher, give so many opportunities to all the student and give immediate feedback to the student.

Immediately feedback corrects the student's mistake in time and the student learns.

Similarly, home assignment is a very important aspect of acquiring knowledge. But if the same assignment is given to all the students then passive students just copy the assignment from their friends. So, for the shake of knowledge expanding perspective, the home assignment should give individual. That assesses the individual. Moreover, the maximum number of class test boost the confidence level of student for the final exam. Internal examination and feedback system are back-bone of the formative assessment. So, I concluded that every class teacher or subject teacher conducts the class test several times and give feedback to the students.

The major findings of this study show that there were so many problems in the internal assessment system, the problem related to students, teachers, and the administrative department. And my study concluded that the solution is in three categories, they are student, teacher, and administrative department. In student categories, the student should aware of all the components of the internal assessment, submit the assignment on time, don't use political power to pressurize the teacher, follow the teacher's instruction, follow the rule, etc. On the teacher categories, give assignments according to the nature of the subject matter, according to the nature of

the student, assess the student individually, imply all the components in all semesters, create a collaborative environment to learn mathematics, etc. Similarly, the administrative department should orient all the teachers and students about the internal assessment system, make a supportive environment in the college, keep a details record of the individual student, follow the timetable, etc. If these things are done properly then the internal assessment will be improved.

Implications of the Study

Every research has implications in different sectors (Shrestha, 2016 cited in Bhusal, 2021). The study with this topic "Student Perception Towards the Internal Assessment in Semester System" has also implications in different sectors. The major focus of this study was to explore the student perception of the internal assessment system and also to analyze the improvement process of the assessment system in mathematics education. The major implication fields of this study are educational and administrative. The major implication of this study were as follows:

Educational implications

- It is helpful to the teachers to select the appropriate method of giving the assignment.
- It is helpful to the teachers to select an effective way to assess the student.
- It is useful for the students to know the component of the internal assessment system.
- It is helpful for the students to be aware of their assessment system.
- It is helpful to the students for being active participant in the classroom and develops teaching skills.
- It is helpful to the new researcher to know the gap in internal assessment.

- It is helpful for mathematics teachers, students, researchers, curriculum planners, etc.

Administrative implications

- It is helpful to the administration to disseminate the internal assessment to all the students.
- It is helpful to the administration to imply the same procedure of internal assessment to all the colleges.
- It is helpful to the authorities to conduct the orientation program and training program for the teacher and stakeholders.
- It is useful for forming a data bank reference and helps us with an area for further educational research.

Recommendation for Further Researcher

From this study, it has been concluded that there was various problem in the field of an internal assessment system. The problem is related to the student, teacher, administration, college, etc. This little research does not cover all the topics related to the assessment and the different components of assessment. This study was based on only master degree level students and focused only on mathematics education on only three Campuses. This study was limited to only the perception of 110 students for the questionnaire and 6 students for interview towards the internal assessment in the semester system. It did not tell anything about the external assessment system and the relation between the two assessment systems. So further research is needed. Thus, those who want to study further in this field/area can be studied more depth by relating this topic;

- Student perception towards external assessment system/process.
- Correlation between internal assessment and external assessment system.

- Correlation between students obtaining marks in the internal and external assessment.
- The difficulties faced by the administrative department imply the same assessment system in all the colleges.
- This is mixed-method research; the researcher can conduct another study with a narrative inquiry on the same topic.

Reference

- Acharya, J. (2016). *The attitude of teachers and students towards letter grading system in SLC*. Kathmandu: Unpublished M.Ed. Thesis.
- Adam, J. (2018), *The role of homework in a mathematics classroom"*. Dissertations, Theses and Projects.66. Retrieved from <https://red.mnstate.edu/thesis/66>
- Behera, D. (2017). *Assessment of students' learning through constructive approach*. Retrieved from https://www.researchgate.net/publication/331134741_Assessment_of_Students%27_Learning_through_Constructive_Approach
- Bhandari, P. (2022, July 06). *Inferential statistics: An easy introduction & examples*. Retrieved from <https://www.scribbr.com/statistics/inferential-statistics/>
- Bhattarai, D. P. (2017). *Advanced educational psychology* (2nd edition). Kathmandu: Quest Publication Pvt. Ltd.
- Bhusal, B. (2021). *Student's difficulties in learning mathematics: A case study*. Kathmandu: Unpublished M.Ed. Thesis.
- Chettri, D. B. (2018). *Studies in mathematics education* (2nd edition). Kathmandu: Sunlight Publication Pvt. Ltd.
- Chemjung, R. (2018). *Student perception towards the semester system in mathematics education*. Kathmandu: Unpublished M. Ed. Thesis.
- Dangi, B. D. (2021). *Teacher perception and practice on collaborative learning*. Kathmandu: Unpublished M.Ed. Thesis.
- Irshad, N. (2022) *Six reasons why exams are important* [Blog Post]. Retrieved from <https://academiamag.com/six-reasons-why-exams-important/#:~:text=Exams%20develop%20confidence%20which%20increases>

,to%20give%20their%20best%20performance

Joshi, A. D. (2018). *An attitude of master level student towards ICT in mathematics education*. Kathmandu: Unpublished M.Ed. Thesis.

Khanal, P. (2020). *Research methodology in education* (3rd edition). Kathmandu: Sunlight Publication Pvt. Ltd.

Khanal, P., Ghimire, J., Bhattarai, D., Niure, D. & Ghimire, C. (2019). *Measurement and evaluation in education* (2nd edition). Kathmandu: Sunlight Publication Pvt. Ltd.

Lamsal, R., (2022). *Letter grading system by Tribhuvan University at master level*. Kathmandu: Unpublished M. Ed. Thesis.

Michelle, L. D., Jasper, A. & Smits, J. (2017) *The science of cognitive behavioral therapy*. Retrieved from,

[https://www.sciencedirect.com/topics/psychology/social-constructivism#:~:text=Social%20constructivism%20is%20defined%20as,%27%20\(Moodle%2C%202015\)](https://www.sciencedirect.com/topics/psychology/social-constructivism#:~:text=Social%20constructivism%20is%20defined%20as,%27%20(Moodle%2C%202015))

Mussawy, S. A. J., Rossman, G., & Haqiqat, S. A. Q. (2021). Students' and teachers' perceptions and experiences of classroom assessment: A case study of a public university in Afghanistan. *Higher learning research communications*, 11(2) 22–39. DOI: 10.18870/hlrc.v11i2.1244

Muthusamy, A. (May, 2019). *The importance of presentation skills in institution of higher learning* [Blog Post]. Retrieved from <https://press.sunway.edu.my/blog/importance-presentation-skills-institutions-higher-learning>

Niure, D. (2018). *Research methodology in education*. Kathmandu: Quest Publication Pvt. Ltd.

- Paudel, G. (2022). *Problems faced by teachers and students in teaching-learning geometry*. Kathmandu: Unpublished M. Ed. Thesis.
- Paul, M. A. (August 1, 2015), *Researchers find that frequent tests can boost learning* [Blog Post]. Retrieved from <https://www.scientificamerican.com/article/researchers-find-that-frequent-tests-can-boost-learning/>
- Rai, M., (2021). *Students' experience on learning mathematics through semester system: A narrative inquiry*. Kathmandu: Unpublished M. Ed. Thesis.
- Sharma, C. & Sharma, N. (2012), *Educational psychology*. Kathmandu: MK Publisher and distributors Pvt. Ltd.
- Stallard, P. (2020). *H: Home assignments*. DOI: 10.1002/9781119396307.ch10
Retrieved from https://www.researchgate.net/publication/347347513_H_Home_assignments
- Westbroek, H.B., Rens, L., Berg, E. & Janssen, F. (2020). A practical approach to assessment for learning and differentiated instruction. *International journal of science education*. Volume 42, 2020 - Issue 6, Retrieved from <https://doi.org/10.1080/09500693.2020.1744044>
- Yadav, L., Acharya, A., Sharma, O. P. & Chettri, D. B. (2017). *History of mathematics* (2nd edition). Kathmandu: Sunlight Publication Pvt. Ltd.
- Faculty of Education, Central Department of Education (2022) *M.Ed. programme*
Retrieved from https://tucded.edu.np/index.php?route=product/category&path=249_251
- Public Service Commission (2076). *Bi.Ni syllabus*. Author.

Appendix A

Closed-Ended Questionnaire

Dear Student/Friends

I am a student of the Central Department of Education, Department of Mathematics Education, Kirtipur. I am conducting research entitled "Student Perception Towards the Internal Assessment in Semester System". This is for the partial fulfillment of the requirements for the degree of Master of Education. To complete this research, I have prepared a set of questionnaires based on the internal assessment system and they are Group work, Participation and Presentation, Home assignment, Class text, and Overall review of the internal assessment system. This questionnaire is based on the Likert five-point attitude scale so decide after reading the statement carefully. I am very thankful for your valuable help and would like to express gratitude to you and your institute. The questionnaire data will be kept confidential and only used for research purposes.

You are kindly requested to fill in all the questions.

Researcher

Tikaram Bastola

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Personals Details

School/Collage Name:

Gender:

Please give tick marks (✓) which you feel are the best options.

(SA = Strongly Agree, A = Agree, U= Undecided, D = Disagree and SD = Strongly Disagree)

S.N.	Statement	SA	A	U	D	SD
Group Work						
1	Group work is helpful for learning mathematics.					
2	Group work is conducted as per our syllabus.					
3	Students are fully responsible to do the group work.					
4	Teachers are fully responsible for conducting group work.					
5	Personal assessment is more effective than group work assessment.					
6	Group work should be removed and keep only personal assignments for assessment.					
Participation and Presentation						
7	Participation and Presentation are compulsory for internal assessment.					
8	Presentation is a very useful tool for developing teaching skills.					
9	Presentation with PBL is more effective.					
10	Presentation is less effective for some subjects.					
11	Immediate feedback helps to the student to know the student's mistake before it's too late.					

12	I can't learn anything without being present in the classroom.					
Home Assignment						
13	Student gets more time and sources to learn.					
14	There was a plagiarism (copy-paste) system in the home assignment.					
15	Home assignments should be strictly personal rather than in a group.					
16	All students submit the home assignment on time.					
17	Home assignment is only for internal assessment.					
18	I never re-submit the home assignment in college life.					
Class test						
19	The class test is conducted in a summative manner.					
20	The teacher gives so many chances to upgrade the internal marks.					
21	The class test is done only two times in every subject.					
22	The class test is done only one time before the board exam.					
23	Class tests and board exam questions are almost the same.					
24	The maximum number of the class test gives a better result in formative evaluation.					
Overall Review						
25	Honestly, I know all the components of the internal assessment system of our syllabus.					
26	We follow all the components of the assessment all semester.					

27	I like a home assignment rather than a class test.					
28	The internal assessment system should be revised					
29	Personal biasness still exists while conducting the internal assignment.					
30	Authorities are making their internal assessment system as per their easiness. -klbo lhDd]jf/L lng"ePsf JolQmx?n] cfGtl/s d"Nof8\sg cfkm\g} tl/sfn] ug{x\G5 . _					

Appendix B

An interview guideline

(All guidelines are related only one mathematics education)

Here we follow the 30 statement which is prepared to collect the quantitative data and the result of this data.

1. Collage details:
2. Talk about the internal assessment system and its implementation.
 - a. How do you take the process of internal assessment?
 - b. How effectively is the internal assessment is practiced in your class/subject?
 - c. Are all the components of internal assessment effectively applied in the assessment procedure?

Talk about components of the internal assessment system.

- a. Group work
- b. Participation and presentation
- c. Home assignment
- d. Class test and
- e. Overall review of all components of the internal assessment system.

Talk about the weakness of all the components.

Talk about the improvement process of the internal assessment in the semester system.

Appendix C

Statistical Formula Used in Data Analysis for Reliability Test.

Statement	Respondent										Mean
	1	2	3	4	5	6	7	8	9	10	
1	4	4	3	5	5	5	4	5	4	4	4.3
2	4	4	5	4	4	3	3	5	4	4	4
3	2	5	3	4	5	4	4	5	4	4	4
4	3	4	4	4	4	4	3	5	4	4	3.9
5	2	4	2	4	5	2	3	4	2	2	3
6	2	5	3	1	4	4	4	5	2	3	3.3
7	4	4	4	4	5	4	4	3	4	4	4
8	5	2	4	5	5	5	4	5	5	5	4.5
9	5	5	1	5	5	4	4	5	4	5	4.3
10	3	4	3	5	3	3	4	3	4	5	3.7
11	4	4	5	5	4	2	5	5	4	4	4.2
12	5	4	4	4	3	5	4	3	5	3	4
13	4	2	1	5	5	4	4	5	4	4	3.8
14	5	3	3	4	2	4	4	5	5	4	3.9
15	2	2	5	5	4	5	3	5	4	4	3.9
16	4	2	4	3	2	4	2	3	4	4	3.2
17	1	4	3	5	2	2	2	5	4	2	3
18	2	3	3	2	2	2	4	1	3	3	2.5
19	4	3	2	4	4	4	3	5	2	4	3.5
20	3	4	3	1	3	2	4	3	4	4	3.1
21	2	2	4	2	4	4	2	5	2	3	3
22	2	4	5	2	2	2	4	5	4	2	3.2
23	4	4	5	4	3	4	4	5	4	3	4
24	4	4	2	5	4	4	4	3	4	4	3.8
25	4	4	2	4	3	2	4	3	3	4	3.3
26	4	3	4	2	3	2	4	2	4	3	3.1
27	4	4	4	5	4	4	3	5	4	4	4.1
28	5	4	4	2	4	4	4	5	4	4	4
29	5	3	4	5	4	5	4	3	4	3	4
30	4	5	3	5	4	5	3	5	4	3	4.1

('x' represent the mean of the odd statement and 'y' represent the mean of even statement.)

x	y	xy	x ²	y ²
4.3	4	17.2	18.49	16
4	3.9	15.6	16	15.21
3	3.3	9.9	9	10.89
4	4.5	18	16	20.25
4.3	3.7	15.91	18.49	13.69
4.2	4	16.8	17.64	16
3.8	3.9	14.82	14.44	15.21
3.9	3.2	12.48	15.21	10.24
3	2.5	7.5	9	6.25
3.5	3.1	10.85	12.25	9.61
3	3.2	9.6	9	10.24
4	3.8	15.2	16	14.44
3.3	3.1	10.23	10.89	9.61
4.1	4	16.4	16.81	16
4	4.1	16.4	16	16.81
Sum	56.4	54.3	206.89	215.22

Value of 'r' using excel function is $r = 0.77746351$

The manual calculations are below:

$$\begin{aligned}
 r &= \frac{n\sum xy - \sum x \sum y}{\sqrt{n\sum x^2 - (\sum x)^2} \sqrt{n\sum y^2 - (\sum y)^2}} \\
 &= \frac{15 * 206.89 - 56.4 * 54.3}{\sqrt{15 * 3228.3 - 3180.96} \sqrt{15 * 3006.75 - 2948.49}} \\
 &= \frac{3103.35 - 3062.52}{\sqrt{47.34} \sqrt{58.26}} \\
 &= \frac{40.83}{6.88 * 7.63} \\
 &= \frac{40.83}{52.49} \\
 &= \mathbf{0.78}
 \end{aligned}$$

Thus, a correlation coefficient of 0.78 indicates a stronger positive correlation.

11	Observed	42.7	44.5	8.3	3.6	0.9	100	94.31
	Expected	20	20	20	20	20	100	
12	Observed	12.7	16.4	28.2	30	12.7	100	14.34
	Expected	20	20	20	20	20	100	
13	Observed	24.5	57.3	11.8	5.5	0.9	100	102.69
	Expected	20	20	20	20	20	100	
14	Observed	15.5	42.7	22.7	13.6	5.5	100	39.70
	Expected	20	20	20	20	20	100	
15	Observed	19.1	44.5	20	15.5	0.9	100	49.31
	Expected	20	20	20	20	20	100	
16	Observed	19.1	35.5	15.4	25.5	4.5	100	26.64
	Expected	20	20	20	20	20	100	
17	Observed	12.7	36.4	20	24.5	6.4	100	26.37
	Expected	20	20	20	20	20	100	
18	Observed	12.7	17.3	20	28.2	21.8	100	6.55
	Expected	20	20	20	20	20	100	
19	Observed	9.1	54.5	24.6	8.2	3.6	100	86.92
	Expected	20	20	20	20	20	100	
20	Observed	17.3	40	21.8	17.3	3.6	100	34.34
	Expected	20	20	20	20	20	100	
21	Observed	10.9	33.6	22.7	25.5	7.3	100	23.33
	Expected	20	20	20	20	20	100	
22	Observed	11.8	31.9	12.7	33.6	10	100	27.36
	Expected	20	20	20	20	20	100	

23	Observed	7.3	22.7	18.2	30.9	20.9	100	14.57
	Expected	20	20	20	20	20	100	
24	Observed	18.2	57.3	10.9	10	3.6	100	92.32
	Expected	20	20	20	20	20	100	
25	Observed	19.1	50	18.2	10.9	1.8	100	65.91
	Expected	20	20	20	20	20	100	
26	Observed	21	53.6	14.5	10	0.9	100	81.25
	Expected	20	20	20	20	20	100	
27	Observed	13.6	44.6	19.1	20	2.7	100	47.31
	Expected	20	20	20	20	20	100	
28	Observed	20	54.5	15.5	8.2	1.8	100	84.05
	Expected	20	20	20	20	20	100	
29	Observed	15	49	19	10	7	100	56.80
	Expected	20	20	20	20	20	100	
30	Observed	13.4	50.5	19.6	13.4	3.1	100	65.16
	Expected	20	20	20	20	20	100	

$$\chi^2 = \left(\sum \frac{(o_i - e_i)^2}{e_i} \right), \quad i = 1, 2, 3, 4, 5 \text{ (Goodness of fit test)}$$

Where O_i = Observed value, $df = (\text{row}-1) * (\text{column}-1)$

$$e_i = \text{Expected value} = (2-1) * (5-1) = 4$$

One example for one statement. (statement no. 1)

$$\chi^2 = \frac{(60.9-20)^2}{20} + \frac{(34.6-20)^2}{20} + \frac{(2.7-20)^2}{20} + \frac{(0-20)^2}{20} + \frac{(0-20)^2}{20}$$

$$= 152.05 > (\chi_{0.05, 4}^2 = 9.49), \text{ Similarly other calculation have been done.}$$

Natural mean. Neutral mean was calculated by adding the numerical value of five options of every statement i.e. 5,4,3,2,1 was assigned with SA, A, U, D, SD for the positive statement and SD, D, U, A, SA for the negative numerical value.

$$\text{Natural mean} = 5+4+3+2+1/5 = 3$$

Mean. Mean is calculated by adding the response of all the respondents to one statement and dividing by the number of respondents.

Chi-square. Chi-square is calculated according to the above process and formula.