# EVALUATION OF STUDENT PERCEPTIONS ON "MUDDIEST POINT" CLASSROOM ASSESSMENT TECHNIQUE IMPLEMENTED AS A FORMATIVE ASSESSMENT METHOD

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***ABSTRACT***

*The purpose of this study is to use "Muddiest point" classroom assessment technique as a type of formative assessment in Software Development Practices (ICT) course at University of Vocational Technology and to assess student perceptions on the technique. The study employed "Muddiest point" classroom assessment technique in the class and conducted a perception survey with regard to use of muddiest point assignments at the end of the course. As per the survey A majority of students 30 numbers agreed that Muddiest Point CAT is beneficial to the course (Mean =4.24 n=45) and 28 agreed Muddiest point CAT to be continued in the course.(Mean=4.22) 24 students agreed that The Muddiest Point CAT should be applied to other courses as well (Mean=4.18. 53% of students satisfied with the use of Muddiest point CAT for Classroom learning and 31% were extremely satisfied . The perception survey showed positive overall student perception on CAT used. And the technique can be used as a simple, but effective formative assessment method for Software Development Practices (ICT) course.*

***KEYWORDS***

*Muddiest point, Classroom Assessment Techniques (CAT), Formative Assessment*

## 1. INTRODUCTION

One of the key challenges faced by tertiary education is to provide timely feedback for the students. Feedback is essential in assessing students in teaching learning process. Teacher evaluation feedback is necessary to evaluate teaching effectiveness as well. Therefore conducting formative assessment in the classroom is essential to ensure that the expected learning is achieved. Classroom Assessment Techniques (CAT) has been utilized as one method of bridging this teaching learning gap.

Software Development Practices (ICT) is a course that taught at University of Vocational Technology which has components that expect students to learn, understand and apply. Assessment methods practiced in this course were mostly summative assessment methods such as written examinations and assignments. Implementation of suitable formative assessment method is a felt necessity in this course to assess student learning and teaching effectiveness.

Assessments can be broadly classified as formative and summative assessment. Summative assessment is done at the end of learning period to evaluate the effectiveness of learning. Formative assessment is used during the learning period and used to improve learning and teaching which is reflective and student centered. Formative assessment provides time for student

and teacher to be corrected and adjusted before the summative assessment takes place. (Adams, 2004)

As per Angelo and Cross (1993) formative assessment techniques identified as Classroom Assessment Techniques (CAT) and several CATs include the Minute paper, Memory Matrix , Concept Maps and Muddiest Point.
CAT is considered as formative assessment process rather than summative process which evaluate students' performance for grading. Feedback collected by applying CAT can be adapted to teach better in meeting students' needs. (Black and William, 1998)

CAT assessments facilitate students to be self-reflective on subject matter taught and provide the teacher with feedback on how well students learn. Teacher can use information to revise or improve their teaching approaches and strategies. The "Muddiest Point" assessment specifically requires student's active participation where student has to submit a written question or comment which was least clear during the teaching.

The "Muddiest Point" Class Room Assessment Technique was developed by Dr.Fredrcik Mosteller, (Moesteller 1989) which is frequently used due to its easy adaptability.

The "Muddiest Point" is a simple Class Room Assessment Technique (CAT) where, the teacher asks students at the end of session, to answer the question of "what was the muddiest point / most unclear or confusing point came across today?" At the end of the class sessions, students were asked to spend 1-2 min time to write reflectively on muddiest point of the lecture session.

This was considered as ungraded anonymous assignment. During the next session, based on the feedback of students, the lecturer discussed more on sections which were considered as difficult to understand or muddiest points for students.

Further, Angelo and Cross (1993) noted that, the course goals need to be matched with CAT to be effective. Muddiest Point assessment technique can be effectively used in this purpose to promote declarative learning and to facilitate the recall and understanding.

Angelo (1991) reported positive benefits of using CATs in wide variety of disciplines. Affective improvements in student leaning observed as per the Stedman (1998). Oher observed benefits are rapport building between student and teacher (Cottell, 1991) and collaborative learning ( Angelo& Cross,1993). Teachers were able to self-reflect on their teaching which helped them to make positive changes and strategies in teaching. (Stedman,1998)

On this view, this research study was initiated to assess the perception of students on using "Muddiest Point" Classroom Assessment Technique as a of formative assessment method in Software Development Practices (ICT) course at University of Vocational Technology.

## 2. METHODOLOGY

Software Development Practices is first semester course offered to B.Tech in ICT Degree programme at University of Vocational Technology. The course needs active participation in order to understand the content as its more practical oriented.

The study sample consisted of 45 students. In practising this assessment method, first the lecturer informed the class that they will be assessed at the end of the session. At the end of the session students were asked to reflect on the muddiest point/most unclear point that came across in the

learning session. Students were given 1-2 min time to think reflectively and asked to write down a question in a piece of paper and to place it in a box at the back bench. This was considered as an ungraded anonymous assignment. During the next session, the lecturer discussed more on sections which were considered as difficult to understand or muddiest points by students. This assessment was practiced for all 10 sessions for the course. At the end of the course, students were invited to complete perception survey questionnaire with regard to use of Muddiest point CAT. The questionnaire consisted of 9 Likert scale questions and one open ended question to discuss drawbacks of CAT applied.

## 3. RESULTS AND DISCUSSION

25 Students agreed that use of Muddiest Point CAT helped them to focus on the lesson while 18 strongly agreed with a Mean of 4.36. Survey results showed that 20 students agreed and 23 strongly agreed on Muddiest point CAT allowed them to self-reflect on the lesson. 22 agreed that asking questions in written format encouraged them to clarify points rather than asking questions orally. A majority of students 30 numbers agreed that Muddiest Point CAT is beneficial to the course ( Mean =4.24) and 28 agreed Muddiest point CAT to be continued in the course and as well.(Mean=4.22). 24 students agreed that The Muddiest Point CAT should be applied to other courses as well( Mean=4.18)

Table 01: Muddiest Point –CAT Survey responses (N=45).

| Question | Strongly disagree | Disagree | Neither agree or disagree | Agree | Strongly agree. | Mean |
|---|---|---|---|---|---|---|
| **The Muddiest Point CAT helped me to focus on the lesson** | 0 | 0 | 2 | 25 | 18 | 4.36 |
| **The Muddiest Point CAT helped me with self-reflection on the lesson** | | 2 | | 20 | 23 | 4.42 |
| **After the lecturer explained the difficult point , the overall lesson was well understood** | 0 | 0 | 2 | 25 | 18 | 4.36 |
| **The use of the Muddiest Point CAT is better than asking questions orally in the class.** | 0 | 2 | 5 | 22 | 16 | 4.16 |
| **The use of the Muddiest Point is beneficial to this course** | 0 | 0 | 2 | 30 | 13 | 4.24 |
| **The use of the Muddiest Point should be continued in this course** | 0 | 1 | 2 | 28 | 14 | 4.22 |
| **The Muddiest Point CAT should be applied to other courses as well.** | 0 | 1 | 5 | 24 | 15 | 4.18 |

1=Strongly disagree; 2= Disagree; 3= Neither agree or disagree; 4= Agree; 5= Strongly agree.

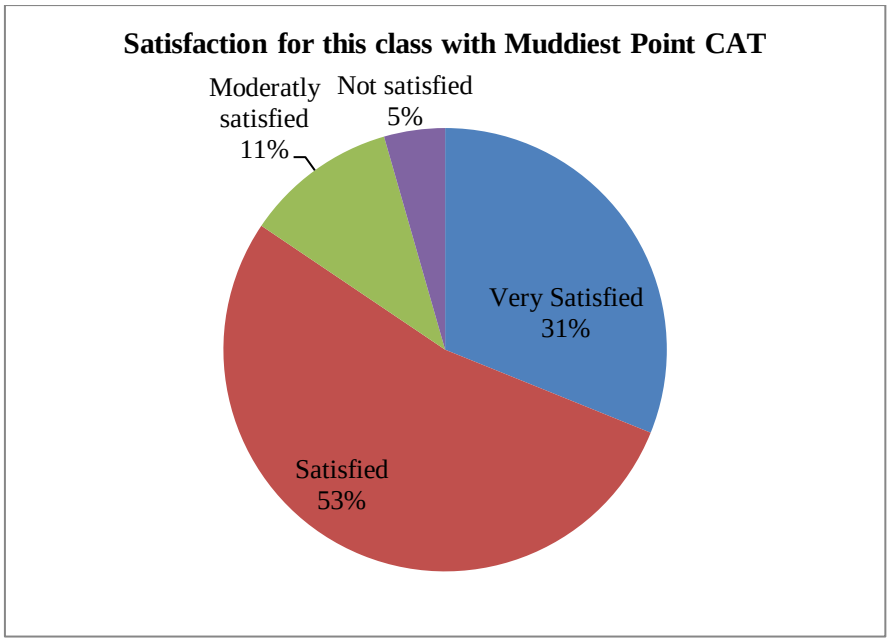


Figure 01. Student satisfaction for the class when Muddiest Point CAT is used

53% of students were satisfied with the use of Muddiest point CAT for Classroom learning and 31% were extremely satisfied. 11% were moderately satisfied. 5% were not satisfied with the CAT used. The perception survey showed positive overall student satisfaction on CAT used.

Drawbacks of the Muddiest Point CAT as per students view were seen as some students find it difficult to explain or comprehend what they don't understand. The time taken to answer a question in CAT used is considered lengthy as some student feel asking same question verbally during the class is more effective.

## 4. CONCLUSIONS

As a formative assessment method in ICT course, Muddiest Point CAT had provided results in consistent with previous literature that established the value in reflective learning and improving satisfaction of the learning among students.

The Muddiest Point CAT provided useful information for the lecturer to revise the teaching content and to upgrade teaching strategy to suit the student learning needs.

Students who are hesitant and shy to ask questions, found it easy to respond via writing. From the lecturer's ' point of view, Muddiest Point CAT is easy to administer with little preparation and gave the teacher understanding of difficult sections based on students' feedback.

Since sample was selected based on convenience sampling method, the findings are not generalizable. Further research would be needed across other courses, and other universities to generalize such findings . For further studies, other formative assessment tools should be tested in comparison with "muddiest point" assessment technique to get a clear understanding on which is the best formative assessment technique for the ICT courses. Further finding the impact of "muddiest point" CAT on exam success and on learning outcome achievement is another area which is researchable.

Finally it can be concluded that Muddiest Point CAT can be used as a simple, flexible and effective formative assessment method for Software Development Practices (ICT) course which allowed students to actively engage in the learning process.

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