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Research Article

A Pre-Experimental Research on the Implementation of Selected Classroom Assessment Techniques for Music, Arts, Physical Education, and Health

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ABSTRACT

The primary objective of this study is to examine and identify the classroom assessment techniques (CATs) that might provide and help teachers through assessment and evaluation processes in Music, Arts, Physical Education, and Health (MAPEH) using pre-experimental research through one-group pretest-posttest design. The study was conducted at Jose Abad Santos High School in Manila, Philippines during the third grading period of the researcher's practicum. The sample of the study consists of 20 students selected through the purposive sampling technique. Quantitative and qualitative data analyses were employed. The instruments used in the study were a teacher-made quiz, CATs sample assessment as the treatment, and the perception survey questionnaire (PSQ) regarding the CATs. The result revealed that there is a significant difference between the pre-evaluation and post-evaluation after the CATs implementation. In the post-evaluation, the mean score was significantly higher than the pre-evaluation, which indicates that the CATs improved the performance of students in MAPEH. On the other hand, as revealed in the PSQ, the students regarded the CATs positively. It shows, in this case, that CATs are a great alternative to traditional assessments. Other CATs to be developed and implemented for better learning and effective teaching are recommended.

Keywords: Assessment, Classroom assessment techniques, Mapeh, Evaluation, Perception

Introduction

Individual students, using distinctive ways of thinking, relating and developing, may be best suited to learning in a specific way. The

idea of students having unique styles of learning has implications for strategies for teaching. Because preferred input and output modes differ from one person to another, it is important

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that teachers use a variety of teaching techniques to meet the needs of individual learners effectively (Nunan, 1988). The paradigm shift in pedagogical practices as envisaged by the educational system will ensure that lessons are delivered and assessed more efficiently and effectively, primarily for the performance of our learners in learning processes (Good, 1972).

In the Philippine's educational setting, the Department of Education [DepEd] (2002) Order No. 73, s. 2002, notes that assessment should be used primarily as a quality assurance method to evaluate the progress of students in achieving expectations, encourage self-reflection and personal responsibility for one's learning, and provide the basis for profiling the performance of students. Classroom evaluation is an important part of curriculum implementation, according to the Policy Guidance on Classroom Assessment for the K to 12 Basic Education Program. It helps educators to track and assess the progress of learners and to change instruction accordingly. Classroom assessment informs the learners of their success, as well as their parents and guardians (Tabuena et al., 2020). The challenges of evaluating the success of students as well as their efficacy in teaching are constantly faced by teachers. Evaluation choices may sustainably improve the performance of students; direct teachers in improving the teaching learning process and help policy makers improve the education system (Santos, 2007). In response to this challenge, the researchers thought that the use of formative evaluation, particularly Classroom Assessment Techniques (CATs), could enhance the performance of students in music, arts, physical education, and health (MAPEH). There are many types of tests of learning from which an instructor can choose (Tabuena, 2019).

In general, Classroom Assessment Techniques (CATs) are simple, non-graded, anonymous, in-class activities designed to provide useful feedback on the teaching-learning process to teachers and students as it occurs (Angelo & Cross, 1993). However, few teachers in the grand teaching arena, irrespective of academic disciplines, are aware of and knowledgeable about the important considerations in the construction of different assessment processes.

This has sometimes led to confusing and conflicting opinions and ideas that lead to a meaningless endeavor. When used on an ongoing training component, CATs improve the quality of the learning experiences of the students, and students feel more involved in the learning process (Soetart, 1998). Classroom testing and evaluation planning requires determining what is to be measured and then precisely defining it so that tasks that require the intended knowledge, skills and understanding can be constructed while the assessment process takes place, as it reflects various relevant measures in the learning outcomes related to music, arts physical education and health learning (Maningas, 2013; Vidal, 2005).

This action research study is an attempt to furnish the teachers with the purpose of providing background knowledge of the characteristics of proper different evaluative measures – either in formative or summative assessment, assisting teachers in developing skills necessary in the assessment instruments for evaluation, which are the classroom assessment techniques.

Theoretical Framework

The theoretical basis of this action research is anchored in the provisions and policy guidelines on classroom assessment for the K to 12 Basic Education Program issued by the DepEd (2015) Order No. 8, s. 2015. The recognition and intentional consideration of the proximal development zone of the learners is at the heart of this evaluation framework (Vygotsky, 1978). Appropriate evaluation is committed to ensuring the success of learners in moving from guided to independent display of knowledge, understanding, and skills, and to allowing them to successfully transfer this in future situations. From this point of view, evaluation facilitates the development of higher-order thinking and 21st century skills for learners. Accordingly, the assessment view recognizes the unity of instruction and assessment. Assessment is part of daily lessons and expands the daily activities in the classroom that are already in place in the K-12 curriculum. Furthermore, the Department of Education (2003) released DepEd Order No.

79, s. 2003, in which Assessment and Evaluation of Learning and Reporting of Students Progress in Public Elementary and Secondary Schools was promulgated in order to emphasize the assessment and evaluation of learning in all general subjects at primary and secondary level.

Statement of the Problem

The primary objective of this study is to examine and identify Classroom Assessment Techniques that might provide and help teachers through assessment and evaluation processes. To achieve this objective, the study answered the following specific questions:

1. What is the performance of the students before and after the implementation of Classroom Assessment Techniques (CATs)?
2. Is there a significant difference between the mean score of the students before and after the implementation of Classroom Assessment Techniques (CATs)?
3. Is there a gain in score in the students' performance with the use of Classroom Assessment Techniques (CATs)?
4. What are the students' perceptions on the use of Classroom Assessment Techniques (CATs)?
5. What are the Classroom Assessment Techniques (CATs) that might provide and help teachers through assessment and evaluation processes in music, arts, physical education and health (MAPEH)?

Hypotheses

The following null hypotheses were tested at 0.05 level of significance:

1. There is no significant difference in scores before and after the implementation of Classroom Assessment Techniques.
2. There is no significant gain in scores before and after the implementation of Classroom Assessment Techniques.

Methods

Research Design

This study was initiated to determine the effectiveness of classroom assessment techniques (CATs) in teaching MAPEH. This study

utilized inferential statistical data analysis, experimental design through one-group pretest-posttest design (Asaad & Hailaya, 2004; Zulueta & Costales, 2003). Quantitative and qualitative data analyses were employed. The mean results of pre-evaluation and post evaluation were compared to determine the effect of CATs on the performance of the students. The difference between the mean score performance of the pre-evaluation and post evaluation was computed and tested for significant difference. The study utilized test of differences of two means taken from the same group (t-test for a dependent sample).

Participants of the Study

The sample of the study was selected through purposive sampling technique among Grade 10 students of a particular section enrolled at Jose Abad Santos High School, Binondo, Manila, Philippines during the practicum of the researcher. The subjects used in the study were 20 students. The class schedule for the MAPEH subject was at 1:50-2:40 in the afternoon, from Monday to Friday.

Research Instrument

The researcher utilized the following research instruments for data collection: (a) teacher-made quiz, in which the pre-evaluation and post evaluation were subjected and administered in preparation of different number of test items in music, arts, physical education and health; (b) Perception Survey Questionnaire (PSQ), this survey questionnaire was administered regarding the perception of the students on the Classroom Assessment Techniques (CATs), the effect of CATs in the teaching-learning process, the scale was used in the PSQ is presented in Table 1; (c) classroom assessment techniques (CATs), these are the strategies of educators use to gauge how well students comprehend key points in a lesson or a course, and the (d) lesson plan and instructional devices, the tools for teaching (Adanza, 1995; Bluman, 2010; Subong, Jr., 2005).

Table 1. Classroom Assessment Techniques Perception Survey Questionnaire Scale

Scale	Range	Interpretation
5	4.20 – 5.00	Strongly Agree
4	3.40 – 4.19	Agree
3	2.60 – 3.39	Undecided
2	1.80 – 2.59	Disagree
1	1.00 – 1.79	Strongly Disagree

Data Gathering Procedure

This study used the three stages of action research: Pre-Implementation Stage, Implementation Stage, and Post Implementation Stage (Asperas, 2005; Brookhart, 2005; Hutt, 2006).

Pre-Implementation Stage.

In this stage, in accordance of the requirement in the practicum (practice teaching), the researcher has a span of one-week observation to identify the existing problem/s in the nature of and among the students. This starting point gave way to the researcher a time to reflect and analyze the behavior and condition of the students in terms of their performance in MAPEH. During the observation week, it was found out that there was a low mean score in the first four subjects (MAPEH) by means of a number of teacher-made quizzes. The results of the mean scores in the four subjects were subjected to the pre-evaluation before the implementation of the CATs.

The researcher obtained analysis towards the result of the pre-evaluation from 20 students subjected in the study from the following variables: (a) attendance, performance of the students might affect in the number of presents in the class, whereas lesson might not taught in the following day; (b) student teacher, relationship between the teacher and the students might be the cause of changing the attitude in terms of learning of the students for a new Student Teacher (this includes the classroom management and teaching processes); (c) earning styles, different learning styles contribute in the performance of the students, in which strategies of a teacher might affect suitably or not in the teaching-learning process; and (d) assessment and evaluation processes, procedures of

assessing and evaluating the students might have difference from their previous (original) teacher to the present Student Teacher.

Respectively, the first problem of this study would entail the performance of the students before the implementation of Classroom Assessment Techniques (CATs). The data from this stage served as the pre-evaluation in the study.

Implementation Stage.

The CATs were introduced in this stage. Incorporating the classroom assessment techniques in the lesson plans ensure an effective progress in the performance of the students. This stage answers the fifth problem of the study: "What are the Classroom Assessment Techniques (CATs) that might provide and help teachers through assessment and evaluation processes in music, arts, physical education and health (MAPEH)?"

The data from this stage will be the post evaluation in the study. The results of the mean scores in the four subjects were subjected to the post-evaluation after the implementation of Classroom Assessment Techniques. Right after the practicum, the PSQ was prepared to be answered by the students about their evaluation towards classroom assessment techniques. Table 2 shows the scale, range, and interpretation used in the implementation of the CATs through the PSQ.

Table 2. Perception Survey Question on the Use of Classroom Assessment Techniques

Scale	Range	Interpretation
3	2.34 – 3.00	Strongly Evident
2	1.67 – 2.33	Evident
1	1.00 – 1.66	Not Evident

Post Implementation Stage.

This stage answers the second, third and fourth problems of the study, as well as the elaboration of the fifth question. The results of the pre-evaluation and post evaluation were collected and used as the basis to find out the effectiveness of classroom assessment techniques in assessing students' performance in MAPEH. These data were analyze quantitatively including the mean of pre-evaluation and

post evaluation, the mean difference and the gain in scores. The data that were collected from perception survey questions were treated quantitatively and qualitatively. Pearson's r Coefficient of Correlation was also tested if the identified CATs were reliable by means of the result in the Periodic Test (average in MAPEH) and the final grade (average of four subjects - MAPEH) of the students, whole class (Punsalan & Uriarte, 1987; Tapson, 1998).

Data Analysis

The collected data were subjected to statistical analyses. All data were tested at 0.05 level of significance. The following statistical tools will be use in interpreting the gathered data: percentage, weighted mean, t-test, standard deviation, Hake factor <g>, used to measure how much the students gained in the evaluation (Hake, 1998), and the Pearson's r coefficient of correlation.

Result and Discussion

Performance of the Students on the Implementation of Classroom Assessment Techniques

Table 3. Performance of Students in MAPEH

Variables	Mean	N	Standard Deviation
Pre-evaluation	77.2125	20	34.9289
Post Evaluation	86.4750	20	32.4690

Significant Differences Before and After the Implementation of CATs

Table 4. Paired Sample t-test (Correlated Means) in MAPEH

Variables	Mean Difference	t-value	Significant Value	Decision H ₀
Pre-evaluation & Post Evaluation	9.2625	5.045	2.093	Rejected

Gain in Scores in MAPEH on the Implementation of CATs

The obtained value of gain of average (Hake factor, shown in Table 5) was 0.40647 inferred to a moderate gain in scores of the students in MAPEH learning, with the used of the Classroom Assessment Techniques.

Table 5. Gain of Average / Normalized Gain (Hake, 1998)

Range	Inference
0.000 – 0.230	Low Gain
0.231 – 0.519	Moderate Gain
0.520 – above	High Gain

Students Perception in Classroom Assessment Techniques

Table 6. Students Perception in Classroom Assessment Techniques

Question No.	Weighted Mean	Remarks
1	4.096	Agree
2	4.258	Agree
3	4.258	Agree
4	3.645	Agree
5	4.064	Agree
6	4.000	Agree
7	4.193	Agree
8	4.516	Strongly Agree
9	4.322	Agree
10	4.548	Strongly Agree
General Weighted Mean	4.190	Agree

Classroom Assessment Techniques in Music, Arts, Physical Education and Health (MAPEH)**Table 8. Classroom Assessment Techniques in Music, Arts, Physical Education, and Health (MAPEH) for Junior High School Students**

Classroom Assessment Techniques	Weighted Mean	Inference
Background Knowledge Probe	2.935	Strongly Evident
Focused Listing	2.838	Strongly Evident
Misconception/Preconception Check	2.838	Strongly Evident
Pro and Con Grid	2.548	Strongly Evident
Analytic Matrix	2.838	Strongly Evident
One-Sentence Summary	2.548	Strongly Evident
Concept Maps	2.516	Strongly Evident
Audiotaped Protocols	2.967	Strongly Evident
Documented Problem Solutions	2.741	Strongly Evident
Human Tableau or Class Modeling	2.612	Strongly Evident
Paper or Project Prospectus	2.677	Strongly Evident
Student-Generated Test Questions	2.709	Strongly Evident
Mean	2.731	Strongly Evident

Post Implementation Evaluation

All the scores of the subject students obtained in their Periodic Test results (average) and Final Grade results (average) were tabulated by the researcher in the given sample size which is 40 (whole class). From the sum of each column, the degree of relationship (reliability) was computed using Pearson Product-Moment of Correlation Coefficient; the computed value of r is 0.53349 or 0.53. This value implies a high correlation between the scores obtained in Periodic Test results and Final Grade results. Therefore, there is a significant difference (relationship) in the scores obtained in the Periodic Test results (average) and Final Grade results (average).

Discussion

The results revealed that the students had a low performance in the pre-evaluation before the implementation of classroom assessment techniques with the mean score of 77.2125 and SD of 34.9289. There was an increase in the students' performance in the post evaluation after the implementation of CATs with the mean score of 86.475 and SD of 32.4690. In addition, the result showed that there is a significant

difference in the performance of students in MAPEH learning before and after the implementation of classroom assessment techniques. The mean difference in the mean score was 9.2625. The obtained t is greater than the tabular t , thus the hypothesis of no difference in mean scores before and after the implementation of Classroom Assessment Techniques is rejected. Grieve (2003) explained that classroom assessment is an ongoing sophisticated feedback mechanism that carries with its specific implications in terms of learning and teaching. In the light of this research, it was further observed that the classroom assessment techniques emphasizes the principles of active learning as well as student-centered learning.

By using feedback attained through CAT's, teachers gain insight into which concepts their student's understand the best and which ones are most confusing. They can then use this information to decide when there needs to be more instruction, and when the class is ready to move on to the next topic. In this way, teachers are able to meet the needs of their students most effectively. Based on the result of the perception survey questionnaire and interview, the students had perceived positively on the

use of classroom assessment techniques, 10 out of 10 questions were agreed by the students, questions 8 and 10 of strongly agree remark. They have agreed that classroom assessment techniques had a positive effect on their performance in MAPEH with an average mean of 4.19 (Table 6).

The identified classroom assessment techniques in music, arts, physical education and health (MAPEH) were all strongly evident with an average mean of 2.7305. The students were highly recognized the following classroom assessment techniques as part of their learning and progress in their performance in MAPEH. The Classroom Assessment Techniques (CATs) indicated in Table 8 provide help teachers through assessment and evaluation processes in music, arts, physical education and health (MAPEH). These twelve classroom assessment techniques are simple and controlled formative assessments that could used by teachers as part of an integral domain in assessment and evaluation of learning which is intended to introduce the classroom teacher and prospective teacher to those elements of measurement and assessment essential to good teaching.

These techniques can also help teachers understand the ways their students learn the best as well as alert teachers when a certain teaching approach is not working very well. Other benefits include flexibility and timeliness. Many of the techniques, although not all, can be used in a variety of ways. They can be adapted to fit large or small class sizes, or modified depending on what subject matter is being taught; they can be used to assess student's recall or critical thinking skills. Also, CAT's require very little time, if any, to be set aside - most of the activities can be conducted while regular instruction time is taking place.

Interviews gathered from the students testify that classroom assessment techniques were different from the other usual method of assessments yet, it is the way to improve their performance in music, arts, physical education and health - giving an opportunity through the questions/activities in CATs to learn better, as well, CATs provide both teachers and students information to improve the teaching-learning process.

The following were the statements agreed by the students in accordance to classroom assessment techniques (results in the Table 6): (a) questions/activities in CATs are easy to understand, (b) the students are free to write their opinion about the lesson being discussed, as well as to acquire their interest on the topics in MAPEH, (c) using the CATs, generally, the students are not anxious in taking the test, it is the way to change their attitudes towards tests because of classroom assessment techniques (4.064); (d) using the CATs, they are motivated in answering the questions/activity in MAPEH; (e) questions/activities in CATs help the students to learn better, enhance their skills in creative thinking, as well as in their writing skills ability; and (f) the CATs provide both teachers and students information to improve the teaching-learning process.

Classroom assessment is a joint process involving teachers as well as learners. In teaching and learning, it is an integral part. Teachers provide adequate assessment when they aim to measure the current and developing abilities of learners holistically while allowing them to take responsibility for the process. This view acknowledges the diversity of learners within the classroom, the need for multiple ways to measure their different abilities and learning potential, and the role of learners in the evaluation process as co-participants. The basis for learning and teaching assessment and evaluation plays an important role in effective teaching, a systematic process that utilizes data analysis and interpretation obtained through certain measures to provide guidance for the teaching process (Linn & Gronlund, 2000).

Conclusion and Recommendation

The performance of the students in MAPEH improved with the implementation of techniques for classroom assessment. In the performance of the students in MAPEH before and after the implementation of classroom assessment techniques, there is a significant difference and gain in scores. Students agreed that techniques for classroom assessment would help them improve their MAPEH performance. The Classroom Assessment Techniques (CATs) have been identified to provide and assist

teachers with assessment and evaluation processes in music, arts, physical education and health, which could be used as part of an integral field of learning assessment and evaluation to introduce those elements of measurement and evaluation essential to the teacher and prospective teacher in the classroom.

In the light of the findings and conclusions of the study, the following recommendations are here offered: (a) use classroom assessment techniques to gather immediate feedback, and to assess the students' learning and effectiveness of teaching practices; (b) the classroom assessment techniques are a better alternative on the traditional formative and/or summative test; (c) find out through an assessment and evaluation of other classroom assessment techniques that might help to improve instruction in the teaching-learning process; (d) teacher should have an enough background on how to use the formative assessments; and (e) more classroom assessment techniques to be developed and implemented for better learning and effective teaching.

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