

COMMUNITY-BASED ASSESSMENT ACTIVITIES ON DISPERSION: BRIDGING THE CLASSROOM AND COMMUNITY IN IMPROVING THE ACADEMIC PERFORMANCE OF STUDENTS

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Relevance. This is the core of the research.

It tries to draw a line that will connect classroom experiences to learning opportunities in the community. The basic premise of this research is that the community offers wide-array of educational resources and experiences not only in developing the cognitive capability of the students but also in translating understanding into relevant experiences in solving community issues and problems, thereby gaining self-worth (Villani & Atkins, 2000).

This premise is rooted from the usual activities that happened inside the “black box” which is commonly referred to as the classroom (Black & Wiliam, 2016). These activities include student-teacher interaction and managing resources. Then, the activities ended with the assessment of learning to determine the mastery level of the students. According to Abeywickrama (2012), assessments are variedly named with completely different features, but all are geared towards achieving the desired target which is to determine the competency level of the students; however, most of these forms of assessments are teacher facilitated paper and pen assessment (Abeywickrama, 2012), and are unlikely to develop the 21st century skills of the learners.

Scott (2015) asserted that there is a need to develop not only the 21st century skills, but also the skills of addressing the global challenges. These skills require the ability to effectively initiate and solve issues through community cooperation and partnership which teaching has failed to handle and to tailor. As a result, the community remained as the unused assessment laboratory for learning despite its available resources. According to Melaville, Berg, & Blank (2006) public schools have not recognized the importance of gaining knowledge through community involvement. They contended that in order for the students to develop the deep sense of citizenship,

teachers need to establish the relevance of the learned competencies to community problems affecting them. The failure of establishing connections between the competencies and the real life problems might have caused the ballooning disengaged students which further lead to dropping out (Melaville, Berg, & Blank, 2006).

Inspired by these new trend in learning experiences, the researcher developed community-based assessment activities where students applied the learned concepts in gathering data from the chosen communities to understand issues relative to climate change which, according to Mohanty & Mohanty (2008) has become a global concern. Results of the study would become beneficial for curriculum planning and adjustments taking into consideration the community as learning resource.

The guiding concept of the research was the utilization of the community for the assessment of learning to improve the performance of the students.

LITERATURE REVIEW

The stronghold of community-based learning as an educational model is to bridge the classroom activities to community participation (Davidson, 2015). In fact, community-based learning has recently become commendable teaching and learning tool of higher learning. Morton (2009) suggested to schools and communities to produce real-life knowledge and meet well-defined community needs.

Ajitoni & Gbadamosi (2015), after conducting a study on the effects of community-based service and educational trips, suggested the need for curriculum scholars to consider strategies that will effectively carry the teaching and learning experiences of the students and that it will translate classroom experiences into a meaningful lifelong learning.

The Department of Education supports these meaningful experiences as they establish the relevance of education in nation building (D.O No. 36), in addressing some pressing issues, and in responding to the fast changing demands of the community through the conduct of relevant activities which will address its community needs (Kendall, 2004).

Akhurst (2016) successfully translate classroom activities into a more relevant experiences through group discussions, reflections, observations, and feedback discussions of the students community-based learning involvements. The experiences, according to Akhurst (2016), have become instrumental in enriching the learning of the students with deeper cognitive and emotional application, and awareness on community issues and problems.

Ibrahim, Rosenheim, Amer, & Larson (2016) determined the perceptions of 176 liberal arts students on community-based learning. Using the 38-item rating scale, the study revealed varied gains of students in the different domains of learning, and the students have implored feelings and attitudes as a result of the community-based learning exposures.

In the United States, the Department of Education effectively carry out community-based learning using the learning kit which has become instrumental in addressing the needs of their immigrant students who have diverse needs and socio-cultural background. The kit, which contained discussion topics, tools, strategies, examples, and related resources, became instrumental in building strong integration of the cultural and linguistic education among immigrant students; in recognizing responsibilities; in providing them a friendly learning environment while helping them become proficient in English and college and career ready; and support them in developing their socio-emotional skills (U.S. Department of Education, Office of English Language Acquisition, 2016).

Some experimental, quasi-experimental, descriptive studies on the use of learning kit revealed inspiring results.

Young & Lee (2005) and Maxwell, Lambeth, & Cox, (2015) conducted an experimental research on inquiry-based learning to improve the Science and academic achievement of the students respectively. The former used the inquiry-based learning kit while the latter compared the use of inquiry-based learning to that of the traditional instruction. Young & Lee (2005) found out that the kit has helped in improving the Science achievement level of 226 fifth grader students, while Maxwell, Lambeth, & Cox, (2015) recorded improvement in the academic achievement of the students, but scores were statistically insignificant which means that both inquiry-based and traditional instruction have the same effect in the academic achievement of the students.

The study of Adeoye & Abimbola (2016) on the achievement in Biology was also conducted in the selected secondary schools using demo kits. A quasi-experimental research design using the non-randomized, non-equivalent pretest and posttest control group 2x2x3 factorial matrix was used. Results of the study revealed that demo kits have helped higher achiever-students and that students achieved better than those who did not use the demo kits.

Muslim (2018) developed a physical kit employing the experiential learning model and determine if the kit will help improve the attitude of the senior high school students towards Physics. A quasi-experimental research method using the non-equivalent pretest-posttest control group design was used, and the study revealed that students who have used the physical kit gained better attitude in the study of fluid in Physics than those who did not.

RESEARCH METHODS

Black and William (1998) concluded that formative assessment in some countries in Europe and Asia did not improve learning. Though, the research was conducted more than a decade, the problem may have not ceased and may have continued to plunge over time; thus, the research targeted to provide teachers new information on assessing students' performance.

Research Design

The research used One Group Pretest-Posttest Quasi-experimental Design. In this design, pretest and posttest scores of the respondents are compared to determine the gains after the treatment was given. The student-participants of the research were exposed to the different measures of relative dispersion. Then, the treatment was introduced. In the treatment, student-participants went to their chosen community and conducted the onsite data gathering. The gathered data were analyzed using the measures of relative dispersion. Then, the analyzed data were presented in the class. The treatment happened three times before the student-participants were posttested on the different measures of relative dispersion.

Participants and Setting

The participants of this research were the 45 purposively chosen Grade 10 students of the Special Program in the Arts (SPA) of Misamis Occidental National High School (MONHS), S.Y 2018-2019.

Instrument Used

Teacher-made performance test was used for the pretest and posttest. The test, which were reviewed and validated by the other teachers, contained two sets of problems.

Scoring for the Performance Assessment. Student-participants manually computed the measures of relative dispersion. The scoring vary in each of the following relative measures:

Coefficient of Variation: one (1) point for the correct solution for the Mean, Standard Deviation, Correction Factor, and Coefficient of Mean Deviation;

Coefficient of Quartile Deviation: one (1) point for Mean, First and Third Quartile, and Coefficient of Quartile Deviation;

Coefficient of Mean Deviation: one (1) point for Mean, Average Deviation, and Coefficient of Quartile Deviation;

The reporting of the results, which is five (5) points, has to follow the format using the given sample:

“Measures of central tendency and dispersion were computed to understand the variability of scores for variable. Results revealed $N = \underline{\hspace{1cm}}$, $M = \underline{\hspace{1cm}}$, $SD = \underline{\hspace{1cm}}$, (include other measures). (Interpretation of the results).”

Data Gathering Methods

Pre-conduct of the Community-Based Assessment

The conduct of the community-based assessment, which includes the protocols, scoring procedure, and rating process of the student-participants, was communicated to the parents. After seeking approval from the parents, the student-participants chose the community where they will conduct their community-assessment activities. A letter requesting approval from the barangay captain of the community to conduct the activities was sent.

Conduct of the Community-Based Assessment Activities

After seeking approval from the barangay captain, the student-participants and the teacher-researcher conducted the series of community-based assessment activities. Students gathered data through interview and photo documentation of the problems that have contributed directly or indirectly to climate change.

Post-conduct of the Community-Based Assessment Activities

Secondly, after gathering data on problems or issues related to climate change, the student-participants used the measures of relative dispersion to analyze and interpret the problems/issues. Then, the student-participants crafted their action plan and presented for future action. Lastly, the student-participants took the posttest.

Statistical Tools Used

Gathered data were analyzed using Mean, z-test, and Simple Linear Regression.

Mean. It was used to get the general picture of the impact of the community-based assessment activities in the performance test of the students.

z-test. It was used to determine if pretest performance scores of the participants significantly differ with that of the posttest.

Simple Linear Regression. It was used to determine how much the assessment test scores have contributed in the first quarter final rating of the participants.

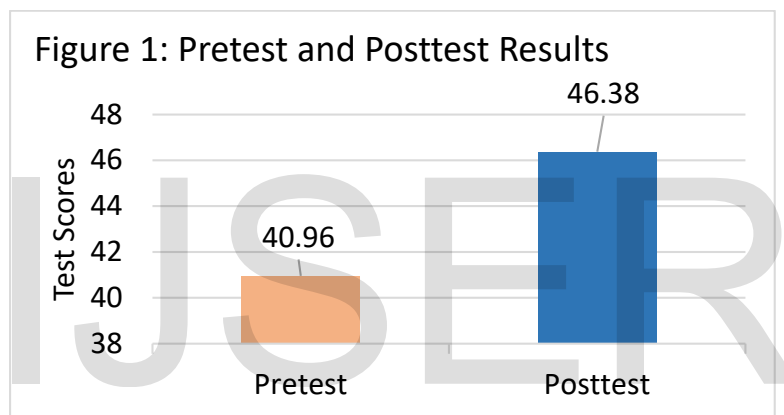
RESULTS AND DISCUSSIONS

Philippine educational system has taken a paradigm shift on its view of assessment as product rather than a process (Saefurrohman & Balinas, 2016). The product view of assessment is

a better way of recognizing the need for the students to get out from the usual activities in the black box (Black & William, 2016); thus, learning engagement is possible in the conduct of the community-based assessment as it bridges the school and the community (Melville, Berg, & Blank, 2006).

Pretest and Posttest Results

Figure 2 reveals a performance assessment Pretest Mean Score of 40.96 and a Posttest Mean Score of 46.38 with a recorded increase of 5.42.

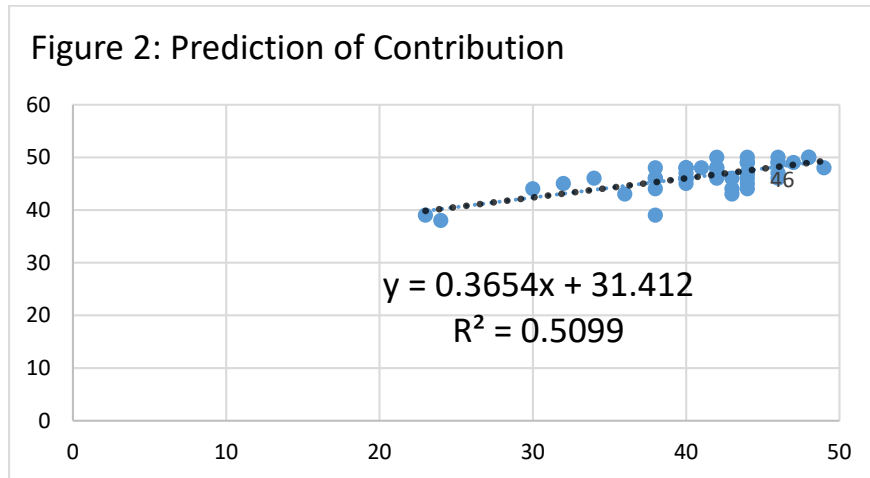


df = 44
z Stat = 5.83718975
z Critical = 1.644853627

The computed z-test value obtained is 5.83718975 which is greater than the tabular value of 1.644853627 with df 44 at .05 level of confidence; hence, the null hypothesis is rejected. This means that there is a significant difference between the pre and post-performance assessment scores of the Grade 10 students.

Simple Linear Regression was also used to determine how much will the performance assessment scores contribute to the final rating of the student-participants.

A significant regression equation was found ($F(1,43)= 44.7360785, p<.005$), with an R^2 of 0.509893755; hence, the null hypothesis is rejected. This means that performance assessment scores have significant relationship with that of the final rating of the student-participants.



The student-participants performance assessment scores are further predicted a final rating equal to $0.3654x + 31.412$. This means that the final rating of the students increased 31.412 in every point of increase in the performance assessment.

The results of the z-test and regression supports the findings of Ibrahim, Rosenheim, Amer, & Larson (2016) that students, who were exposed to community-based learning experiences have varied in their extent of improvements in the different domains.

Conclusion

Community-Based Assessment potentially improve the proficiency of the student-participants in applying measures of relative dispersion to mitigate climate change.

Recommendations

Based on the conclusion, the teacher-researcher recommends the following:

1. Teachers need to expose students to community-based assessment,
2. Curriculum planners should consider community-based assessment as a form of assessment, and
3. Teacher-researcher need to conduct a study that will evaluate the effectiveness of the other parts of the learning kit.

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