CONTEXTUALIZED TEACHING IN IMPROVING MATHEMATICAL PROFICIENCY OF GRADE 8 STUDENTS IN ALAMINOS INTEGRATED NATIONAL HIGH SCHOOL

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ABSTRACT

This study was focused on determining the effect of Contextualized Teaching in improving the Mathematical Proficiency of Grade 8 Students in Alaminos Integrated National High School, for the school year 2019-2020. This study is an experimental in nature involving thirty-five (35) out of four hundred twenty six (426) students. The scores and ratings of the respondents were analyzed using frequency, percent, standard deviation, weighted mean. Sample paired T-test was used to test the difference between pre-test and post-test scores of the respondents.

The study revealed the following findings: During the pretest evaluation, 35 or 100% of the students have low level of proficiency. On the other hand, the post test score of the respondents after exposing students in a contextualized approach, most of the student in the class got a score of 18-34 which was interpreted as average proficiency, 3 students fell under high proficiency level while 5 student still fell under low proficiency. Thus, there is a marked improvement in their Mathematical proficiency. Also there is a significant difference between the pretest and posttest scores of the students which implies that contextualized teaching is effective in improving student’s mathematical proficiency.

On the basis of the findings, the following recommendations are hereby presented:

1. Other teachers may consider this as a basis for adjustment in their lesson as well as in teaching methods employed in the conduct of Mathematics instruction.
2. School administration may support the teacher to attend seminars or training related to contextualization instruction.

3. Since the study was conducted only in Grade 8, other Grade levels may also be considered for the implementation.

4. Since the study made use of contextualization in teaching Mathematics, development of modules using contextualized instruction may also be considered.

I. CONTEXT AND RATIONALE

The Educational system today is aligned to the Standard Principle R.A. No. 10533 known as the “Enhanced Basic Education Act 2013” which states that:

“The curriculum shall be culture-sensitive; The curriculum shall be contextualized and global: the curriculum shall use pedagogical approaches that are constructivist, inquiry based, reflective, collaborative and integrative: The Multilingual Education (MTB-MLE) which starts from where the learners are and from what they already knew proceeding from the known to the unknown.”

In the Division of Laguna, public schools are encouraged to adopt a curriculum to its local condition, the content and the process of teaching must be related to its local environment. The instructions delivered by the teacher have the purpose of providing learning opportunities to meet the learners’ needs, interests and abilities.

Teachers exposed to new teaching strategies, techniques, and knowledge are empowered to keep up with new trends of education, reflect on their teaching, and enhance their teaching quality in an ever-changing teaching environment.

Contextualization is a form of learning which happen through linking ideas across courses. As far as mathematics teaching is concerned, it refers to placing the target mathematical concept in a realistic setting to make the learning process meaningful to the students.
The researcher’s experience as a mathematics teacher for ten years are accustomed to addressing questions from students like “Why do I need to know this?” or “When am I going to use this?” or “Will this be on the test?” Students who learn in a contextual environment are simultaneously introduced to the relevance of the learning content, which commensurately improves motivation. Predmore (2005) asserts, “Students are learning material within a concrete, memorable context…Once they see the real-world relevance of what they’re learning, they become more interested and motivated”. Once the teacher captured the interest of the students to learn, the teacher intentionally engages students in higher order thinking, students learn more. In turn, contextual learning has the potential to motivate and effectively engage students who view school as boring or non-essential, or who have struggled to make the connections between the demands of the classroom and their own personal goals and aspirations.

Thus, this action research aims to determine if contextualized teaching can improve the Mathematical proficiency of selected Grade 8 students of Alaminos Integrated National High School. The research is based on the result of the diagnostic test employed during the first week of June 2019. This aims to treat students who were diagnosed with LOW PROFICIENCY LEVEL in Probability.

The researcher is very optimistic that the teaching strategy will also be beneficial not only to the current study but to the new batch of students to come.

II. ACTION RESEARCH QUESTIONS

This research seeks to answer the following questions:

1. What are the level of proficiency in the pretest and posttest of grade 8 students in Mathematics?
2. Does the intervention applied increase the mathematical proficiency of the students?
3. Is there a significant difference between the pretest and posttest scores of grade 8 students who are exposed in contextualized teaching?
III. PROPOSE INNOVATION, INTERVENTION, AND STRATEGY

Contextualized Teaching and Learning (CTL) is identified as a promising strategy that actively engages students and promotes improved learning and skills development. In CTL, learning goals are elevated to higher order thinking skills in the process of learning to find information, adapt to change, and communicate effectively while relating to others” (Berns & Erickson, 2001)

One of the goals and effects of a contextualized approach is to capture a student’s attention by illustrating the relevance of the learning experience. It helps students find and create meaning through experience, drawing from prior knowledge in order to build upon existing knowledge. A primary principle of contextualization is that knowledge becomes the students’ own when it is learned within the framework of an authentic context. (Wisely, 2009).

In this light, the researcher wanted to determine the effectiveness of contextualization in improving the performance of grade 8 students in Alaminos Integrated National High School. The researcher will design lessons with contextualized instruction to see improvement in the mathematical proficiency of the students. The teacher used HOT questions as part of the strategy and record the result.

IV. ACTION RESEARCH METHOD

Participants:
This research utilized thirty 35 Grade 8 students of Alaminos Integrated National High School who were first diagnosed with LOW PROFICIENCY LEVEL during the conduct of the pretest in probability (2019).

Data Gathering Method:
The researcher identified the participants through the result of Grade 8 diagnostic test in 2019. The result of the diagnostic test were utilized to determine the least mastered topics.
The teacher administered the 40-item pretest to students whose mathematical proficiency fall under low level. From the result, the researcher used contextualization in teaching Probability 8. After the last topic, post-test was personally administered and retrieved by the researcher to get the level of performance of the students, then the researcher and other experts validated the scores of the students. The statistical procedure, analysis, and interpretation of data was done. The researcher analyzed the results and wrote conclusions whether contextualization of mathematics teaching improves students' Mathematical proficiency.

V. Data Analysis Plan:
This study is a pre-experimental research, specifically single pre-test and post-test design method of research which involves three steps: (1) administering pre-test; (2) applying the experimental treatment to the subject; (3) administering a post-test. Differences attributed to the application of the experimental treatment are then evaluated by comparing the pre-test and posttest scores.

Mean, standard deviation, frequency, and percent were used to measure the scores of the respondents. Sample Paired T-Test was also used to test the difference between the pretest and posttest scores of the respondents.
VI. RESULTS AND DISCUSSION

This chapter showed the following data that explained the findings of the study and then analyzed to determine the effectiveness of contextualized teaching in Mathematical proficiency of Grade 8 students at Alaminos Integrated National High School.

### TABLE 1 Mathematical Proficiency in the Pretest and posttest of Grade 8 Students

<table>
<thead>
<tr>
<th>Score</th>
<th>Pretest</th>
<th>Posttest</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
</tr>
<tr>
<td>35 – 40</td>
<td>-</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>18 – 34</td>
<td>-</td>
<td>-</td>
<td>27</td>
</tr>
<tr>
<td>0 – 17</td>
<td>35</td>
<td>100</td>
<td>5</td>
</tr>
</tbody>
</table>

Table 1 is the frequency distributions of the pretest and posttest score of grade 8 students. During the pretest evaluation, 35 or 100% of the students have low level of proficiency. On the other hand, It can be seen that after exposing students in a contextualized approach, 27 or 77% of the student in the class got a score of 18-34 which was interpreted as average proficiency, 3 students fell under high proficiency level while 5 student still fell under low proficiency. This result showed that there is a marked improvement in their Mathematical proficiency.

### Table 2 Test of Difference in the Pretest and Posttest Scores

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>Mean Difference</th>
<th>t-value</th>
<th>p-value</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>pretest</td>
<td>8.91</td>
<td>2.16</td>
<td>16.55</td>
<td>2.032244509</td>
<td>3.19028E-16</td>
<td>Significant</td>
</tr>
<tr>
<td>Posttest</td>
<td>25.46</td>
<td>5.94</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Editorial Team*

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Table 2 shows a significant change as mean increases from 8.91 to 25.46. The p-value also resulted to a significant difference which mean that contextualization in teaching Mathematics e.i. by using everyday life scenario in connecting Mathematics in real world is effective in improving students' Mathematical Proficiency. This result found support from the study of Samo et al (2017) where presentation of contextual problems can be presented to local context that allowed to learn Mathematics in real context which gave supports to the enhancement of their Mathematical ability.”

The researcher recognizes the importance of using contextual problems in teaching Mathematics because it offers some potential to engage and motivate students in learning Mathematics.

The objective of this action research was to improve the Mathematical proficiency of the students through contextualized teaching and as reflected by the results, it shows an effective strategy was employed.

### VII. ACTION RESEARCH WORK PLAN AND TIMELINES

<table>
<thead>
<tr>
<th>Action/Step(s) Activities</th>
<th>Person’s Responsible</th>
<th>Timeline</th>
<th>Resources</th>
<th>Expected output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create Inquiry for Action Research plan</td>
<td>Researcher</td>
<td>June 2019</td>
<td>Idea’s and inquiry plan</td>
<td>Approval and recommendation from the school head</td>
</tr>
<tr>
<td>Gather data regarding the participants</td>
<td>Researcher</td>
<td>July 2019</td>
<td>Access to result of Diagnostic Test</td>
<td>Review data to determine the need of the participants</td>
</tr>
<tr>
<td>Explain action research plan to school heads</td>
<td>Researcher</td>
<td>August 2019</td>
<td>Question/discussion of purpose</td>
<td>Receive approval from the school head</td>
</tr>
</tbody>
</table>

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Design Lesson plan with contextualized Instruction and making teacher made pretest and posttest

<table>
<thead>
<tr>
<th>Researcher</th>
<th>Sept - Dec 2019</th>
<th>Lesson Plan using contextualized Instruction</th>
<th>Checked and Approved lesson Plan Validated pretest and posttest</th>
</tr>
</thead>
</table>

Implementation of the action research

<table>
<thead>
<tr>
<th>Researcher</th>
<th>January February 2019</th>
<th>Teachers and Participants</th>
<th>Improved Student’s Mathematical Proficiency</th>
</tr>
</thead>
</table>

Recording and interpreting result

<table>
<thead>
<tr>
<th>Researcher</th>
<th>March 2019</th>
<th>Completed Action Research</th>
</tr>
</thead>
</table>

VIII. COST ESTIMATES

The only expenses incur in the research includes the following:

- Bond Paper Php 150.00
- Photocopy Php 250.00

IX. PLANS FOR DISSEMINATION AND ACTION

Contextualization in teaching Mathematics has been implemented in many school districts in the Division of Laguna. Other teachers may consider this as a basis for adjustment in their lesson as well as in teaching methods employed in the conduct of mathematics instruction.

The researcher also wishes that the result of this study will be used as a basis for the development of modules using contextualized instructions.
X. REFERENCES:


K to 12 Mathematics Curriculum Guide May 2016. Department of education


