

Development and Utilization of Supplementary Enrichment Learning Materials toward Students' Improved Performance in Physics 7

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ABSTRACT

This action research aimed to develop and utilize supplementary enrichment learning materials toward students' improved performance in Physics 7 at Mayamot National High School during school year 2016-2017. This study utilized quasi-experimental type of research in order to achieve its main objective, which was to develop and utilize supplementary enrichment learning materials toward students' improved performance in Physics 7 at Mayamot National High School during school year 2016-2017. Quasi-experimental method was utilized by the researcher in determining the impact of the developed supplementary enrichment learning materials in Physics 7 through the results of the pretest and posttest.

Based on the findings, the following conclusions are arrived: (1) the developed enrichment learning materials are well prepared and are acceptable to the Science teachers and department heads and (2) the developed enrichment learning materials in Physics 7 is effective and has improved the performance of the students in the chosen least mastered topics. From the conclusions of the study, the following recommendations are offered: (1) Science teachers should use the developed supplementary enrichment learning materials in teaching the selected least mastered topics; (2) The developed supplementary enrichment learning materials should be further evaluated by other researchers for improvement; and (3) Science teachers should develop supplementary enrichment learning materials for other least mastered topics.

KEYWORDS: *Enrichment Learning Materials, Grade 7 Students, Improved Performance, Physics*

INTRODUCTION

The aim of education is to produce well-rounded and well-prepared students who are ready to face the reality. Also, it provides students the things they need to develop so they can continue to be successful in their chosen endeavor after graduation. As stipulated in Section 2 of the Republic Act No. 10533 "The State shall create a functional basic education system that will develop productive and responsible citizens equipped with the essential competencies, skills and values for both life-long learning and employment."

However, with the present condition of Philippine educational system, Department of Education (DepEd) budget are not sufficient to provide to the needs in every classroom, there are shortages in the classrooms, lack of appropriate instructional materials and other devices that the teacher can use in teaching all over the country. There are many ways to cope up with this scenario, One of them is doing enrichment and intervention program. Ronda (2014) cited in his article at the Philippine Star that "According to Department of Education officials, the intervention class aims to raise the quality of education in all public schools in line with the K+12 (Kindergarten+12 Basic Education Curriculum) program. Mandatory remedial classes will be given to under-achieving students at the end of each quarter

while students with poor grades at the end of the school year will have to attend summer classes."

Enrichment or Intervention class is something that must be part of every classroom from elementary to college. It contributes to the student's achievement of the expected competencies in certain subjects. Students who have difficulty in a particular subject had given a chance to fully understand the least mastered skills of the subject. Moreover, the Department of Education Memorandum No. 46, series of 2013 mandates "Conducting of the new intervention should be done to ensure that poorly performing pupils/ students would be fully prepared to the next level". In order to achieve the objectives of the school, appropriate instructional tools and materials should be used in enrichment and intervention class. These Instructional materials should be appropriate for the diverse abilities and maturity levels of the students. In relation with this, the provisions in section 63, chapter 3 of the educational act of 1982 as it aims to "Develop curriculum, prepare instructional materials, prepare and evaluate programs to upgrade the quality of teaching".

Jamela (2011) mentioned that low performance of students is attributed to the deficiency of textbook and instructional

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materials in teaching the subject. Thus, it is important for the teacher to know how to develop teaching aid and materials. The selection of instructional materials should be based on the needs, interest and capabilities of the pupils. Likewise, Presidential Decree No. 6-A, Section 5 states that: "Designing, utilizing and improving instructional technology and developing or producing textbook and other instructional materials will lead to quality education". Developing instructional materials is an important element in the teaching-learning process. It is an instrument to make the process of learning fruitful and systematic. Salandanan (2001) as cited by Baltazar (2011) mentioned that instructional materials, particularly printed materials, offer the best means by which a teacher can provide directions in his students' daily search for new understanding and verification.

The researcher being a science teacher chose to develop the enrichment learning materials because he believes that developing instructional materials will be a great help in the further development of teaching and learning process. Also, the researcher believes that the study could address the school's needs to provide suitable instructional materials for intervention to cope with the least mastered topics. And lastly, he strongly believes that the enrichment learning materials in Science 7 will be used as a reviewer in different achievement tests like Division Performance Test (DPT), National Achievement Test (NAT) and National Career Assessment Examination (NCAE).

Review of Related Literature

Intervention whether it is an enrichment or remediation class is important to cope up with the current condition of the Science education in the Philippines. As mentioned by Selvarajan and Vasanthagumar (2012:51), remedial teaching can also be defined, as the name implies, as designed to cater to the needs of children unable to keep pace with the teaching-learning process in a normal classroom. Remedial teaching will act as a safety valve for the students who are behind the expected level of achievement. It involves diagnosis of specific difficulties, provide suitable remedial measures and provide support to prevent reoccurring of them again in future.

Furthermore, Ebert et.al (2011:458), claim that an intervention is some effort that supplements normal procedure either by providing remediation and enrichment, or by extending or reducing responsibility or authority. Interventions typically are in response to some specific need, and though they can be a permanent change. Also, Remedial teaching is to ensure the desired quality of learning. It is very essential for ensuring effective learning and in improving the quality of education. (<https://www.scribd.com/doc/39375713/Remedial-Teaching>)

For-at-risk children who do not appear to be making sufficient progress to overcome their difficulties with classroom instruction alone, it can be more than a bit of a challenge to find time in the day to provide additional intervention services. (Scanlon et.al, 2010:46) But of course, it is also important to choose the suitable instructional materials / tools during the intervention class. Agoo (2012:12) in her article in the modern teacher, in order for learning to be effective, teachers should use instructional materials. These will also help the average learners to easily

cope up with the lesson. Likewise, Hammerman (2010:33) mentioned, Instructional materials can be powerful tools for providing high quality instruction in the science classroom. Well-designed units and carefully crafted lessons may be used to guide the instructional process for all teachers.

One of the studies that are related to the present study was conducted by Parales (2012), He developed a work text in Physics which showed very significant results in increasing the academic performance in Physics of fourth year students. The experimental group or those students taught with the use of the developed work text in Physics got a higher mean percentage score compared to the control group or those students taught with the use of the textbook from Dep.Ed. Selpa (2012), on the development and validation of enhancement activities in mathematics for grade VI pupils, aimed to determine the effectiveness of the developed enhancement activities in Mathematics. Based on the result of her study, the developed enhancement materials in terms of objectives was highly implemented; content was very highly sufficient; in usefulness, it was found out to be strongly useful; in language and style, it was strongly effective. In terms of the level of performance of the student-respondents, the student respondents showed high increase in their mean percentage score after teaching them with the developed enhancement activities in mathematics

Samonte (2012) on the development and validation of interactive instructional material in elementary algebra, the developed interactive instructional material was based on the least mastered skills in elementary algebra. The study revealed that the developed interactive instructional material in elementary algebra was an effective instrument for teaching-learning process since the student-respondents shows a significant increase in their mastery level of the chosen least mastered topics after using the interactive instructional material in elementary algebra. Gomez (2014) on development and validation of work text in food service management, developed supplementary instructional materials in teaching food service management which were found to be very acceptable in terms of objectives, content, language and style, usability, learning activities and graphics. Se (2015) on the development and validation of supplementary learning materials in drafting technology XI, the developed materials increased the level of performance of the student-respondents as reflected on their post-test.

Statement of the Problem

This action research aimed to develop and utilize supplementary enrichment learning materials toward students' improved performance in Physics 7 at Mayamot National High School during school year 2016-2017.

Specifically, it sought answers to the following questions:

1. What is the performance of the two groups of student-respondents in pretest and posttest?
2. Is there a significant difference in the performance of the two groups of student-respondents in pretest and posttest?

Hypothesis

This study pursued the hypothesis that there is no significant difference in the performance of the two groups of student-respondents in pretest and posttest.

METHODOLOGY

This study utilized quasi-experimental type of research in order to achieve its main objective, which was to develop and utilize supplementary enrichment learning materials toward students' improved performance in Physics 7 at Mayamot National High School during school year 2016-2017.

Quasi-experimental method was utilized by the researcher in determining the impact of the developed supplementary enrichment learning materials in Physics 7 through the results of the pretest and posttest.

Research Design

Group 1 (Control Group)	Without Supplementary Enrichment Learning Material
Group 2 Experimental Group)	With Supplementary Enrichment Learning Material

RESULTS AND DISCUSSION

Table1 Comparative Analysis between the Performance of the Two Groups of Respondents in Pretest

	Control Group	Experimental Group
Mean	6.17	5.83
t-value	1.3750	
Sig. value	0.1735	
Interpretation	Not Significant	
Decision to Ho	Accept Ho	

$\alpha = 0.05$ Level of Significance

The table 1 presents the comparative analysis between the performance of the two groups of respondents in pretest. It can be gleaned from the table that there is no significant difference in the pretest result of the two groups of respondents as reflected in the t-value of 1.3750 with a sig. value of 0.1735 which is greater than $\alpha = 0.05$. Therefore, the null hypothesis is accepted. This implies that the two groups of respondents were comparable. However, even the statistical result appeared not significant. As reflected in the mean of the two groups, control group ($x = 6.17$) performed higher than experimental ($x = 5.83$) in terms of pretest.

Table 2 Comparative Analysis between the Performance of the Two Groups of Respondents in Pretest

	Control Group	Experimental Group
Mean	24.26	35.89
t-value	1.1567	
Sig. value	0.033	
Interpretation	Significant	
Decision to Ho	Reject Ho	

$\alpha = 0.05$ Level of Significance

The table 2 presents the comparative analysis between the performance of the two groups of respondents in pretest. It can be gleaned from the table that there is a significant difference in the posttest result of the two groups of respondents as reflected in the t-value of 1.1567 with a sig. value of 0.033 which is less than $\alpha = 0.05$. Therefore, the null hypothesis is rejected. This implies that the experimental group ($x = 35.89$) performed higher than control ($x = 24.26$) in terms of posttest.

Conclusions

Based on the findings, the following conclusions are arrived at:

1. The developed enrichment learning materials are well prepared and are acceptable to the Science teachers and department heads.
2. The developed enrichment learning materials in Physics 7 is effective and has improved the performance of the students in the chosen least mastered topics.

Recommendations

In line with the findings and the conclusions of the study, the following recommendations are offered:

1. Science teachers should use the developed supplementary enrichment learning materials in teaching the selected least mastered topics.
2. The developed supplementary enrichment learning materials should be further evaluated by other researchers for improvement.
3. Science teachers should develop supplementary enrichment learning materials for other least mastered topics.

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