READING FOR MEANING IN TEACHING INTEGRATED SCIENCE I

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ABSTRACT

Reading is the basic foundation on which academic skills of an individual are built. The education system knows this fact very well, and hence it is given a top priority in secondary education. Many believe that reading is an apt measure of person's success in academics. The purpose of the study is to determine the effectiveness of Reading for Meaning in teaching Integrated Science I in relation to students' performance. Specifically, they looked into the pre and post-test performance of Grade 7 students in the different Science process skills, the pre-post mean gain in reading for meaning and conventional approach, and the challenges met by teachers in implementing Reading for meaning. The study used the quantitative and qualitative methods of research. Two groups were needed for the experimental design. Based on the findings of this study, the Reading for Meaning Approach is an effective approach in teaching Integrated Science I. This method is an effective in developing the science process skills of comparing, classifying, observing, inference, communicating, controlling variable and manipulating variable. The results of the study helped the learners to value the importance of reading for meaning in integrating the curriculum in integrated science I.

Keywords: Curriculum, Integration, Reading for meaning, Science Process Skills

INTRODUCTION

Education is the best social leveller. It is the very answer to poverty, corruption, hate, and ignorance. If it really is like many people believe it is, then the study of the key educational, ergo curricular, issues in the Philippines is a significant endeavour that needs serious pair of eyes, ears and hands, according to Engr. Herman M. Lagon.

In PISA (Programme for International Student Assessment), 2009 (OECD-Organization for

Economic Co-operation and Development, 2010), the top scores in science were achieved by Shanghai-China. Asian countries that appear to share attitudes towards the value of education (Rep. of Korea, Hong Kong-China, Shanghai-China, Singapore and Japan) consistently perform better in PISA test results. There is also a strong correlation between test scores on the three domains tested in PISA, suggesting that mathematics, science and reading are related. From these results we can see that nurturing high performance and tackling low performance need not be mutually exclusive, and that excellence in mathematics and science requires excellence in reading.

According to the IBON, 2010, [1] the literacy rate in the Philippines has regressed a lot over the last ten years. This is attributed to the dwindling quality, relevance and accessibility of education—the very basic rights of the Filipino youth as etched vividly in the Constitution. Despite the good things that Department of Education has reported such as the increased number of classrooms and students, the fact remains that the crowding 1:70 classroom ratio, the decreasing aptitude of students and the decadence of the values of the young, among hundreds others, hamper the progress of the state of education of the country. Filipino students have consistently obtained scores below the international average in science and math (e.g., TIMSS). They have also fared poorly in national achievement tests (e.g., NAT).

According to Idana, (2012), [2] on the results released by the National Training and Research Center (NETRC), the testing arm of Department of Education, Makati students fared well in the three key subject areas. In the elementary level, the city got the highest rating in Science with 66.03 percent, followed by English and Mathematics with 65.75 and 61.43 percent, respectively. In the high school level, Makati students topped in Mathematics with 72.34 percent, followed by Science and English with 42.75 percent and 38.62 percent respectively.

According to Andrew Gonzalez, FSC (Philippine BED 1999 -2004: Analysis, Recommendation and Plans), [3] the problem of education is the inadequacy of the reading skills of our students. Our teenagers do not read anymore. They do not find meaning and importance to reading. This lack of reading skills result to the perennial problems plaguing Philippine education. Based on the Basic Education Sector Reform Agenda (BESRA), multi- sectorial consultative workshops, 2005-2006, make "every child a reader".

As a result, concerns about the educational demands of the 21st century inspired an intensive claim of education reform in 1990s. Such educational reform efforts have required a shift in the emphasis of science education from memorization of facts and procedures to a deeper understanding of the subject matter (American Association for the Advancement of Science (AAAS), 1993; National Research Council (NRC), 1996 and 2005). Thus, the National Science

Education Standards of the United States were released, calling for inquiry as a way in which "students actively develop their understanding of science by combining scientific knowledge with reasoning and thinking skills" (NCR, 1996).

Reading for meaning strategies are purposeful, cognitive actions that students take when they are reading to help them construct and maintain meaning. Reading for meaning is the basic foundation on which science process skills of an individual are built. Many believe that reading is an apt measure of a person's success in academics. This is why most of the subjects taught are based on a simple concept - read, synthesize, analyze, and process information.

[4] As educators it is of utmost importance that we recognize and nurture all of the varied human intelligences and all of the combinations of intelligences in our students. Through this recognition, we can increase our students' learning abilities if we increase their repertoires by actively encouraging them to use all facets of intelligence (Parry and Gregory, 1998).

These observations are realities in teaching Integrated Science I to Grade 7 High School students. The students in Pinamungajan National High School find it hard to read and understand the reading materials given. It was also found out that they have low performance in some diagnostic test especially in science area were they got 41.11% in there NCAE (National Career Assessment Examination) last 2011 and they got also an average of 33.09% of their RAT (Regional Achievement Test) last 2011. This knowledge encourages the researcher to look for means on how reading for meaning strategy improves students learning in Integrated Science I and the effectiveness of this technique in developing the skills of comparing, classifying, observing, inference, communicating, controlling variables and in manipulating variables.

OBJECTIVES OF THE STUDY

The purpose of the study is to determine the effectiveness of Reading for Meaning in teaching Integrated Science I in relation to students'.

Specifically, the study seeks to answer the following questions:

1. What is the pre-test performance of Grade 7 students in both groups on the following science process skills:

1.1. comparing;

1.2. classifying;

1.3. observing;

1.4. inferencing;

1.5. communicating;

1.6. controlling variables;

1.7. manipulating variables?

2.1. What is the post-test performance of Grade 7 students in both groups on the following science process skills:

2.1. comparing;

2.2. classifying;

2.3. observing;

2.4. inferencing;

2.5. communicating;

2.6. controlling variables;

2.7. manipulating variables?

3. Is there a significant mean gain of the pre-post-test in reading for meaning and conventional approach?

4. Is there a significant difference in the mean attitude between students of both groups?

5. What are the challenges evident in the use of Reading for Meaning and conventional approach in teaching science?

METHOD

The study used the quantitative and qualitative methods of research. Two groups were needed for the experimental design. The first group, Group A, composed of one class of the research respondents. This group was exposed to the use of reading for meaning approach in learning science topics included in the first semester in their integrated science I classes. The second group, Group B, was composed of another class of the research respondents. This group was exposed to the science approach in learning science topics included in the first semester in their

integrated science I classes.

Both groups were given pre-test on Science and Technology and Scientific Methods before the first semester begins and post–test about the main concepts of the topics after the first quarter set. In this particular study, the teaching strategies and methods inside the classroom are varied. The effectiveness of the intervention will be determined quantitatively and be compared statistically. The average gain scores in the evaluations of both groups will be compared. The data will be from the given pre-test and post-test.

Table 1. Number of Respondents and Group of Students

Group of Students	Number of Students
Group A (Grade 7 Students)-Using Reading for Meaning	40
Group B (Grade 7 Students)- using the Conventional Approach	40
Total	80

The Process - Both groups of respondents are given pre-test on Matter and Living Things and their Environment before exposing to conventional strategy or the use of reading for meaning for the said lesson.   In teaching the lesson, Group A respondents use the reading for meaning approach while Group B respondents will be using the conventional strategies. Before taking up the lessons, both groups are given a pre-test regarding Matter and Living Things and their Environment. Group A use the reading for meaning while Group B the conventional approach. Group A respondents read the reading materials found in the module. After which, they answer the challenger after reading the given topics. While, the Group B respondents perform the given activity in each lesson and answer the corresponding questioners after every activity. After the discussion of each lesson, both groups A – using the reading for meaning approach and B – using the conventional strategy are given a post-test regarding on Matter and Living Things and their Environment. Scores of pre-test and post-test are recorded for statistical treatment. When the topics on Matter and Living Things and their Environment were discussed, the respondents were asked to answer an Attitude Inventory. Experimental Group respondents answered Attitude Inventory about the use of Reading for Meaning Approach while the Control Group answered Attitude Inventory about the use of Conventional Approach. Both Inventories focused on learning activities, and value integration of the approaches used.

RESULT AND DISCUSSION

The major findings of the study drawn from the research instruments are outlined as follows:

Both groups had a below average performance level in the pre-test. The students in both groups had less prior knowledge on the topics given and some topics were new to them.

There is a significant difference in the performance of both groups in the posttest. The students exposed to Reading for Meaning Approach are Above Average and the students exposed to Conventional Approach are also Above Average.

The students exposed to reading for meaning approach and conventional approach developed of almost the same process skills such as comparing, classifying, observing, inference, communicating, controlling variable and manipulated variable.

There was a significant mean gain from the pre-test to the post-test of the students exposed to Reading for Meaning Approach and Conventional Approach. From the computed results, the researcher discovered that the approaches used in the study were appropriate to the topics to be understood by the students. The nature of subject matter was in line to the academic capacity of the students, there was proper guidance or monitoring by the teacher in understanding the nature of Integrated Science I, and the prepared activities were matched to the cognitive level of th learners. The mean attitude of the students in experimental group was high while the control group was average.

The challenges appeared upon using the Reading for Meaning is the researcher finds it a strength because this study helps the students to enhance their process skills such as, comparing, classifying, observing, inference, communicating, controlling variable and manipulated variable opportunity and at the same time an opportunity because through reading for meaning approach it can enhance students' talents and interests in learning science.

CONCLUSION

Based on the findings of this study, the Reading for Meaning Approach is as effective as the Conventional Approach in teaching Integrated Science

I. Both methods are effective in developing the process skills of comparing, classifying, observing, inference, communicating, controlling variable and manipulating variable.

RECOMMENDATIONS

In the light of the foregoing findings and conclusions the following recommendations are hereby offered:

1. Either reading for meaning approach or conventional approach can be used in teaching Integrated Science I because these are effective in letting the students learn the concepts as well as acquire the skills such as comparing, classifying, observing, inference, communicating, controlling variable and manipulated variable.

2. The use of the Reading for Meaning and Conventional Approaches may be extended to other fields of study for the improvement of the quality of education.

3. Grade 7 science teachers should start introducing students to Reading for Meaning Approach in the early stage of the first Semester to enhance their process skills such as comparing, classifying, observing, inference, communicating, controlling variable and manipulating variable to improve their positive attitudes towards reading.

4. Further research is done as a follow-up study to monitor the effectiveness of Reading for Meaning Approach in Biology, Chemistry and Physics and other natural science courses both in high school and college.

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