



Support Instructional Materials for Chemistry Students of Pangasinan State University, San Carlos City Campus

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Abstract – This study sought to propose support instructional materials for Chemistry students of the Pangasinan State University, San Carlos City Campus during the First Semester of the School Year 2015-2016. It used descriptive and developmental method of research. It involved 301 Chemistry students from Pangasinan State University, San Carlos Campus. The researcher used the questionnaire as the main data-gathering tool. The data gathered were properly coded, recorded, tallied, tabulated and interpreted using the SPSS for windows. Percentages and weighted mean were used for descriptive analysis. The study found out that most of the students had a moderate academic performance in Chemistry. The content of the existing textbooks and other instructional materials based on the objectives is moderately adequate. The support instructional materials were based on the weaknesses of Chemistry students. The support instructional materials in Chemistry were highly acceptable as evaluated by the Chemistry teachers. The researcher recommended that students should be encouraged to exert more effort in studying Chemistry so that their performance will be improved. They should be motivated to change their impression of Chemistry as a difficult subject, but rather they could have fun in studying it. Teachers should make interventions to improve the performance of the students. Such interventions/instructional materials to help them understand more clearly the concepts. Weekly assessment in the Chemistry skills of the students should be done to monitor their performance. Parents and teachers should join hands in improving the performance of the students. Teachers should tell the parents about the difficulties encountered by their children in learning Chemistry. Parents should also monitor the performance of their children in school. They should give their full support in their studies like attending PTA meetings and have follow – ups in their studies. The least learned skills should be given emphasis in teaching. Teachers should use appropriate strategy and techniques to develop the skills and give more exercises for the students to master the skills. The support instructional materials should be presented to the College Dean of Education and be endorsed by the Campus Executive Director of the Campus for its reproduction and utilization to help the Chemistry teachers improve students' performance.

Keywords- Instructional material, Students, Chemistry, descriptive and developmental method

INTRODUCTION

The narrowing circles of the world today are a panorama of Science becoming its axis. It is undoubtedly propelled by inventions brought about by research in Science and Technology. This gives rise to the changing character of our increasingly scientific and technologically dependent society-as such, a Science-education to match – one that which will adequately prepare learners for life and work in this 21st century.

One central goal of most science curricula worldwide is to develop learners' understanding of the nature of science as a way of thinking and a way of life. Through science, the learners would be able to look at socio-societal issues and evaluate them to arrive at scientific societal decisions.

Present day educators strive towards the development of citizens who are fully equipped with technical skills, values and attitudes necessary for independent action and self-directed activities. They are continuously challenged to find new ways of presenting



concepts meaningfully by using technologies to teach every learner to be globally competitive. Science and Technology aims to help Filipino child gain a functional understanding of science concepts and principles linked with real-life situations, acquire scientific skills as well as scientific attitudes in solving everyday problems. These pertain to health and sanitation, nutrition, food production and the environment and its conservation.

The teaching of science specifically General Chemistry under the general education in the tertiary level is more productive when there are appropriate and sufficient instructional materials. However, productive education in Science is far reaching due to the present situation in the Philippine educational system in which there is an adequacy of classrooms throughout the country. But, funds are not enough to cater to the instructional needs in every science classrooms. The science teacher, therefore, is conscientious to devise and provide necessary materials to be used in science classes. (De Guzman, 2014).

One of the most exciting and challenging aspects of Science is that its frontiers are constantly being revised and extended due to the inception of modern inventions and new discoveries. In the same vein, Science Education is in constant flux.

It is in the science classes where learners utilize the different science processes such as observing, communicating, classifying, measuring, inferring, predicting and experimenting.

Curriculum planners and university administrators can enrich the science program through updated seminars and trainings on effective and meaningful strategies in the teaching of Science specifically.

It is in this regard that the Philippine government thrust and vision of education in the year 2000 and beyond is focused more on Science and Technology in order to cope with the demands of industrialization. It is through science that learners understand the complexities of events around them and appreciate the joy of discovering the unknown part of the world.

The state of the Philippine education today is best described as dismal considering the following statistics from the Department of Science and Technology Study. In the said examination, Philippines placed 41st and 42nd in the two subjects' examination among 45 countries. TIMSS measures the performance of its participants by conducting examinations every four years since 1995. (Phillipine Daily Inquirer, September 18, 2005).

This state in Science Education has been attributed in part to the fact that many learners are learning various science facts and different concepts in the lower taxonomy of learning which is knowledge. In particular, most learners are failing to see the connection between what they study in science and their personal understanding of the world, thus, failing to comprehend, analyze, synthesize, apply and evaluate. Students who underwent in their science subjects are expected to have developed skills that include the ability to use, analyze and construct scientific knowledge, to describe and explain real world objects, systems, to draw conclusions/make predictions about future events and to decide a course of action.

The summary of the test results on the achievement in Science brought about that the curriculum in this subject focuses more on memory and recall; not on critical thinking and scientific skills.

The Commission on Higher Education has acted to decentralize curriculum development by empowering University experts in the field of Science in the Regional and National level to develop their own curricular. This also involves the development of instructional materials that consider the special concerns of localities.

However, there is still much to be done in Science Subjects in the tertiary level that is to play a dynamic role in building the country. One is by tackling the problem plaguing the different colleges and universities which is lack of adequate teaching aids and instructional materials so that instructors /educators will not resort to verbalizing the teaching of Science specifically General Chemistry.

OBJECTIVES OF THE STUDY

This study sought to propose an instructional materials for the Chemistry students of Pangasinan State University, San Carlos Campus during the First Semester of the Academic year 2015-2016.

Specifically, it sought to answer the following sub-problems:

1. What is the level of academic performance of the students in Chemistry at the Pangasinan state University, San Carlos city Campus during the 1st Semester of the Academic year 2015-2016?
2. How adequate are the contents of the existing textbooks and other reference materials in the teaching Chemistry based on the objectives?



3. What support instructional materials in the teaching of Chemistry can be developed to enhance instruction?
4. To what extent to the support instructional materials meet the criteria for acceptability based on the evaluation of the faculty members in Chemistry?

MATERIALS AND METHODS

The researcher used descriptive method of investigation in the assessment of the support instructional materials in Chemistry based on the level of performance of the students in Chemistry at the Pangasinan State University, San Carlos City Campus during the first semester of the school year 2015-2016; adequacy of the contents of the existing textbooks and other reference materials in the teaching of Chemistry based on the objectives; acceptability of the support instructional materials based on the evaluation of the faculty members in Chemistry. The study is also developmental as it developed support instructional materials for Chemistry students.

Locale of the Study

This study was conducted at Pangasinan State University, San Carlos Campus with the students taking up Chemistry subject as the research respondents during the 1st semester of the Academic year 2015-2016.

The research subjects of this study were the 301 Chemistry students of Pangasinan State University, San Carlos Campus.

Instrumentation and Data Collection

The main data gathering instrument of the study was a questionnaire-checklist. The questionnaire focused on the level of performance of the students in chemistry at Pangasinan state University San Carlos City Campus during the First Semester of the school year 2015-2016; adequacy of the contents of the existing textbooks and other reference materials in the teaching of Chemistry based on the objectives; acceptability of the support instructional materials based on the evaluation of the faculty members in Chemistry.

The items in the questionnaire were formulated by the researcher and were validated by the members of the research committee. Suggestions were incorporated

in the final draft of the questionnaire. A formal permission to conduct the study and to float the questionnaire was secured from the Office of the President of PSU as well as to the Campus Executive Director of PSU San Carlos Campus.

Tools for Data Analysis

In this study, frequencies and percentages were used as statistical measures to analyze the data for the problems.

A percentage frequency distribution is a display of data that specifies the percentage of observations that exist for each data point or grouping of data points. It is a particularly useful method of expressing the relative frequency of survey responses and other data. The process of creating a percentage frequency distribution involves first identifying the total number of observations to be represented; then counting the total number of observations within each data point or grouping of data points; and then dividing the number of observations within each data point or grouping of data points by the total number of observations.

AV	Statistical Limit	Descriptive Equivalent	DE
5	4.21-5.00	Very Adequate	VA
4	3.41-4.20	Adequate	A
3	2.61-3.40	Moderately Adequate	MA
2	1.81-2.60	Slightly Adequate	SA
1	1.00-1.80	Not Adequate	NA

SUMMARY

The researcher used descriptive method of investigation in the assessment of the support instructional materials in Chemistry based on the level of performance of the students in chemistry at Pangasinan state University, san Carlos City Campus during the first semester of Academic Year 2015-2016; adequacy of the contents of the existing textbooks and other reference materials in the teaching of Chemistry based on the objectives; acceptability of the support instructional materials based on the evaluation of the faculty members in Chemistry. The study is also developmental as it developed support instructional materials for Chemistry students.



Findings

1. Majority of the students taking up chemistry with 152 or 50.50% obtained a General Point Average of 80-84 which fall under descriptive value of "Good". There are also 81 or 26.91% who obtained 85-89 GPA which is also described as "Good". There are only 25 or 8.31% who got and above which is described as "very good". On the other hand, there are 40 or 13.29% who obtained a rating between 75-79.
2. The content of the existing textbooks and other instructional materials based on the objectives is moderately adequate as reflected in the overall average weighted mean of 2.96.
3. The support instructional materials were rated accepted as revealed by the average weighted mean of 4.26. all of the indicators were rated accepted. The highest mean rating was given to the lessons are sufficient to reinforce the students' practice on the objectives of Chemistry with 4.42 while the lowest mean rating was given to the materials are congruent to the skills/objectives with 4.17.

CONCLUSIONS

Based on the findings of the study, the following conclusions were discussed:

1. Most of the students had a moderate academic performance in chemistry;
2. The content of the existing textbooks and other instructional materials based on the objectives is moderately adequate;
3. The support instructional materials were based on the weaknesses in the Chemistry students;
4. The support instructional materials in Chemistry were highly acceptable as evaluated by the Chemistry teachers.

RECOMMENDATIONS

Based on the finding of this study and the conclusions drawn, the following are hereby recommended:

1. Students should be encouraged to exert more effort in studying Chemistry so that their performance will be improved. They should be motivated to change their impression of Chemistry as a difficult subject but rather experiencing fun in studying it.

2. Instructors/Eduactors should make interventions to improve the performance of the students. Such interventions like instructional materials, for the students to clearly understand the concepts.
3. Weekly assessment in the Chemistry skills of the students should be done to monitor their performance.
4. Parents and Faculty members should join hands in improving the performance of the students. Faculty members should inform the parents about the difficulties encountered by their children in learning Chemistry through dialogue/parents' orientation. Parents/Guardians should also monitor the performance of their children in the campus.
5. The least learned skills should be given emphasis in teaching. Teachers should use appropriate strategy and techniques to develop the skills and give more exercises for the students to master the skills.
6. The support instructional materials should be presented to the College Dean for his/her endorsement to the Campus Executive Director to the higher authorities of the University for its reproduction and utilization to help the Chemistry teachers improve students' performance.

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