ABSTRACT

Name of Institution:	De La Salle University-Dasmarinas
Address:	Dasmarinas, Cavite
Title:	**Development of Modules on Selected Topics in Analytic Geometry**
Author:	Janette C. Lagos
Degree:	Master of Arts in Mathematics
Date Started:	March 2002
Date Competed:	March 2004

STATEMENT OF OBJECTIVES:

GENERAL OBJECTIVE

To develop modules on selected topics in analytic geometry.

SPECIFIC OBJECTIVES

1. To determine if there is a need for module development in analytic geometry,
2. To determine the topics to be included in the module development,
3. To develop the modules on selected topics in analytic geometry,
4. To evaluate the modules.

SCOPE AND COVERAGE

This research was limited to developing modules on selected topics in Analytic Geometry. Topics in Analytic Geometry that are included in the module are as follows: Inclination and Slope of a Line, Lines and First Degree Equations, Other Forms of First Degree Equations, Directed Distance Formula, Family of Lines, Analytic Proofs of Geometric Theorems, Graph of an Equation, Circles, Circles Determined by Geometric Conditions, Family of Circles. These modules were subjected to validation, evaluation and revision.

METHODOLOGY

The study made use of descriptive method utilizing developmental-evaluative design. Module development involved the following phases: the needs analysis, pre-planning, module construction, evaluation, writing of the final module. The first phase, **needs analysis**, was done to determine the need for module development in analytic geometry. The second phase, which was **pre-planning**, involved topic selection; cross-examination of reference books, which became sources of discussion, questions for the diagnostic test and exercises and planning of module format. The third phase, **writing the module**, involved designing of the module format; the construction of the diagnostic test, which the students should take before using the modules and the production of the initial draft of the modules. The fourth phase, **evaluation**, involves two stages: evaluation and validation of

students and experts. Selected mathematics mentors validated the modules before they were subjected to evaluation. The researcher made use of validated questionnaire in the evaluation of the modules. Questionnaire was given to the student-respondents and mathematics mentors to evaluate the modules based on content, presentation and usefulness. The modules were also subjected to the readability test using Flesch-Kincaid Readability Statistics. The last phase, **writing of the final module**, involves the revision of the modules based on the recommendations of the experts and the results of student-respondent evaluation.

MAJOR FINDINGS

The major findings are as follows:

1. Students and math mentors of Cavite State University Cavite City Campus agree that there is a need for module development in analytic geometry.

2. The developed modules had Flesch Reading Ease Score that ranged from 59.00 to 72.60. Modules 5 and 10 had Reading Ease Score of 59.00 and 59.7, respectively. These scores indicated that the reading difficulty of the two modules was fairly difficult. Five modules, modules 1,4,6,7 and 8, have reading ease score of 63.1, 69.8, 63.9, 63.6 and 66.7, respectively. These scores indicated that the modules were readable. Three modules, 2, 3, and 9 had reading ease score of 70.9, 70.5 and 72.6,

respectively. These scores indicated that as to reading difficulty the three modules were fairly difficult.

3. Each module's over–all rating based on the experts' evaluation ranged from 3.67 to 3.89. These indicated that each module was rated very satisfactory. The rating on content ranged from 3.60 to 4.00 showing that the evaluation on content was similarly very satisfactory. On presentation, the rating ranged from 3.64 to 4.60, showing that the evaluation was likewise very satisfactory and on usefulness the rating ranged from 3.56 to 3.92, indicating also very satisfactory evaluation.

4. Each module's over-all rating based on the students' evaluation ranged from 3.78 to 3.92. This was an indication that each of the modules was very satisfactory. The rating on content ranged from 3.71 to 3.82 indicating that the evaluation on content was very satisfactory. On presentation, the rating ranged from 3.73 to 3.86, indicating that the evaluation on presentation was also very satisfactory and on the usefulness, rating ranged from 3.86 to 4.11, also indicating very satisfactory evaluation.

CONCLUSIONS

Based on the findings the following conclusions were made:

1. There is a need for module development in analytic geometry.

2. The developed modules are readable and can be well-comprehended by grades 7 and 8 students.

3. The rating on module content, presentation and usefulness is very

satisfactory, which means that the modules had met the standards and are considered as acceptable instructional materials.

RECOMMENDATIONS

The recommendation based on the findings and conclusions are follows:

1. A need analysis should be made prior to module development.
2. The modules should be used not only in Cavite State University – Cavite City Campus but also in other schools for their further improvement.
3. A study should be conducted on the determination of effectiveness of the modules.
4. Developed modules must be improved in such a way that they would become useful not only to the average and below average students but to above average and highly intellectual students as well. In addition to this, the modules must be improved to arouse interest and to get better performance in analytic geometry.
5. Dynamic should be integrated to each module to encourage interaction among students.
6. Modules on other topics in analytic geometry should be developed to complete the topics covered for the whole course in one semester.
7. Other researchers should be encouraged to develop modules in the other fields of study.