

DE LA SALLE UNIVERSITY

A PROPOSED PROGRAM FOR THE MATHEMATICALLY
GIFTED HIGH SCHOOL STUDENTS OF LOURDES
SCHOOL OF MANDALUYONG

A Thesis
Presented to
the Faculty of the Graduate School
College of Education
De La Salle University

In Partial Fulfillment
of the Requirements for the Degree of
Master of Science in Teaching Mathematics

by

EDNA H. NEGRU

March 1995



TABLE OF CONTENTS

Acknowledgement	-----	iii
List of Tables	-----	x
List of Figures	-----	x
Thesis Abstract	-----	xi
I. The Problem and a Review of Related Literature		
The Problem and Its Setting	-----	1
Review of Related Literature	-----	6
Identification of the Gifted Students	-----	11
Acceleration	-----	11
Enrichment	-----	12
Ability Grouping	-----	14
Empirical Studies Conducted Abroad	-----	15
Empirical Studies Conducted in the Philippines and Existing Gifted Programs	-----	20
Synthesis	-----	22
Conceptual Framework	-----	24
Program	-----	26
Evaluation of the Program	-----	29
Statement of the Problem	-----	32



Hypothesis	33
Significance of the Study	34
Scope and Limitation of the Study	35
Definition of Terms	35
II. Methodology	38
Research Design	38
The Respondents	39
Sampling Procedure	40
Sources of Data	41
Instruments	42
Data Gathering	48
Statistical Treatment and Data Analysis	55
III. Presentation, Analysis and Interpretation of Data	
Item Analysis	57
Kuder-Richardson Reliability Test	58
Pretest and Posttest Results of the Experimental Group	58
Pretest and Posttest Results of the Control Group	60



Results of the Analysis of Covariance:

One Way Case ----- 62

IV. Summary, Conclusions and Recommendations

Summary ----- 65

Findings ----- 67

Conclusions ----- 68

Recommendations ----- 69

Bibliography ----- 70

Appendix A Letter of Request to the High School
Principal of Lourdes School of
Mandaluyong to Study the Proposed
Program ----- 75

Appendix B A Sample Instructional Material ----- 76

Appendix C Table of Specifications of the
Original Achievement Test ----- 78

Appendix D Original Achievement Test ----- 80

Appendix E Letter of Request to Administer Achievement
Test to First Year High School of Lourdes
School of Mandaluyong ----- 91

Appendix F Letter of Request to Administer Achievement
Test to First Year High School of Pasig
Catholic College ----- 92

Appendix G Letter of Request to Administer Achievement
Test to First Year High School of La
Immaculada Concepcion School ----- 93

Appendix H Final Form of the Achievement Test ----- 94



Appendix I	Descriptive Data About the Respondents	103
Appendix J	Curriculum Content of Mathematics I under SEDP	104
Appendix K	Curriculum Content of Mathematics I under the Proposed Program	107
Appendix L	Index of Difficulty	111
Appendix M	Item Analysis Data for Discrimination Index (D)	113
Appendix N	Results of Prefest and Posttest of the Experimental Group and Control Group	116
	The Proposed Program for the Mathematically Gifted High School Students of Lourdes School of Mandaluyong	118
	DLSU's STAR	130



DE LA SALLE UNIVERSITY

Lists of Tables

Table 1	Prominent Features of the Curriculum for the Gifted Learners in Mathematics	28
Table 2	Distribution of Samples	41
Table 3	Distribution of the Items of the Otis-Lennon School Ability Test	43
Table 4	Relationships Among Otis-Lennon SAI's Percentile Ranks and Stanines	44
Table 5	Distribution of the Items of the Mathematics Diagnostic Test	46
Table 6	Mean, Standard Deviations and Computed t-value of the Pretest and Posttest Scores of the Experimental Group	59
Table 7	Means, Standard Deviations and Computed t-value of the Pretest and Posttest Scores of the Control Group	62
Table 8	Summary of Results of the ANCOVA	63

List of Figures

Figure 1	A Paradigm Showing the Relationships of Variables	30
Figure 2	A Model Showing the Conduct of the Study	31



ABSTRACT

The descriptive-developmental method was used to develop a program for the mathematical gifted high school students of Lourdes School of Mandaluyong. Forty mathematically gifted first year high school students during the school year 1994-1995 were used as samples in this pretest-posttest research design. Two equivalent groups, the experimental and control groups, were formed with equal number of students. The experimental group was handled by the researcher and the control group was handled by an equally qualified teacher. A validated and researcher-made test was given as pretest and posttest.

t-test and analysis of covariance were used to analyze the data with the pretest scores as the covariates.

The study showed that there is no significant difference in the achievement of the students who were exposed to the program and those who were exposed to the Secondary Education Development Program (SEDP). However, there are indications that an improved program can yield significant difference.



ABSTRACT

This study aimed to develop a program for the mathematically gifted high school students of Lourdes School of Mandaluyong. Specifically, it attempted to answer the following questions:

1. Is there a significant difference in the academic achievement of the experimental group of mathematically gifted students before and after undergoing the program?
2. Is there a significant difference in the academic achievement of the control group of the mathematically gifted students before and after undergoing the Secondary Education Development Program (SEDP)?
3. Is there a significant difference in the achievement of the mathematically gifted students who were exposed to the proposed program and those who were exposed to the Secondary Education Development Program?

This study made use of the descriptive-developmental method with the pretest-posttest design.



compared using the one-way Analysis of Covariance (ANCOVA), with the students' pretest as the covariate. However, prior to using one-way ANCOVA, normal distribution was assured by getting the skewness and kurtosis.

All tests of significance were considered at the .05 level of significance.

FINDINGS

The following are the findings of the study:

1. The t-test for dependent samples which yielded the t-value of 6.09, showed that there was a significant difference in the achievement of the experimental group before and after undergoing the proposed program.
2. Similarly, the t-value of 7.60 showed that there was a significant difference in the achievement of the control group before and after undergoing the SEDP.
3. The one-way ANCOVA revealed that there is no significant difference in the achievement of



the students who were exposed to the special program and those who were exposed to the SEDP. Nevertheless, it was noted that after partialling out the pretest results, the adjusted mean of the experimental group increased while that of the control group decreased.

CONCLUSIONS

In the light of the foregoing findings, the following conclusions may be drawn from the results of the present investigation:

1. The proposed program with a differentiated curriculum is instructionally effective.
2. Secondary Education Development Program (SEDP) is also effective since there was learning after the student were exposed to it.
3. Either the Proposed Program for the Mathematically Gifted or SEDP may be used since there was no significant difference between the achievement of the mathematically gifted students under the

