University of Perpetual Help Rizal

Factors Related to the Cognitive Levels and Learning Difficulties in Chemistry I of Freshmen Students at Selected Higher Education Institutions in CALABARZON

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Cristina E. Sayoto

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ABSTRACT

This study sought to identify the cognitive levels and learning difficulties and some related factors that could predict the academic achievement in Chemistry 1 of freshmen college students in five selected Higher Education Institutions in CALABARZON Area during the Academic Year 2000-2001. The respondents of the study were 1,274 students taking Chemistry 1 and 36 faculty teaching this subject.

The study used the descriptive method of research. Data were gathered using the achievement test in Chemistry 1 and other questionnaires developed by the researcher. The following statistical tools were used in the study: weighted arithmetic mean; frequency distribution; mean; F-test or one way ANOVA; t-test of uncorrelated means; standard deviation and Pearson product moment correlation.

Specifically, this study attempted to identify the profile of students and faculty respondents and determine the level of adequacy of school-related factors among different respondent schools. The academic achievement, cognitive levels and learning difficulties in Chemistry 1 of student-respondents were likewise identified. The above mentioned variables were then differentiated when grouped according to student, faculty and school-related factors. Furthermore, the relationship between academic

achievement in Chemistry 1 and high school grades in Math and Science were also determined.

This research study revealed that the majority of the student-respondents were female and mostly in 16 to 18 years age group. Most of them were functioning at the concrete stage regardless of their attitude and were homogenous in their level of performance in Chemistry 1.

Among the difficulties encountered by them were comprehension, logical reasoning, identification of chemical symbols, formula writing, balancing of chemical equations and mathematical computations. Moderate positive correlation existed between their high school grades in Math and Science and academic achievement in Chemistry 1.

Therefore, it is concluded that among the student-related factors, age and high school performance in Math and Science were related with the achievement in Chemistry 1. In the faculty-related factors, length of experience in the university and the number of years of teaching greatly affected Chemistry achievement. All the school-related factors like instructional materials, equipment and syllabi likewise greatly affected achievement In Chemistry 1.

Achievement in Chemistry 1 can be strengthened by the use of innovative approaches, like concept, mapping, use of modules, and computer-assisted instruction. Teachers should upgrade their competencies,

their teaching strategies as well as the instructional materials and adequacy of equipment used that are suited to the mental structures and capabilities of students.

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TABLE OF CONTENTS

TITLE OF THESIS

APPROVAL SHEET i

ABSTRACT ii

ACKNOWLEDGEMENT iv

TABLE OF CONTENTS v

LIST OF FIGURES vi

LIST OF TABLES vii

Chapter

1 **PROBLEM AND BACKGROUND OF THE STUDY**

Introduction 1

Research Local 6

Theoretical Framework 10

Research Paradigm 11

Conceptual Paradigm 13

Statement of the Problem 14

Assumptions 15

Hypotheses 16

Significance of the Study 16

Scope and Limitations of the Study 19

Definition of Terms 21

2 REVIEW OF RELATED RESEARCH AND LITERATURE

Jean Piaget and the Theory of Intellectual Development 25

Cognition and Intellectual Ability 31

Related Studies on Cognitive Level of Development using Piagetian Tasks 35

Learning Difficulties in Chemistry 39

Problem Solving Ability..... 40

Teaching Strategies Affecting Science Achievement 48

Teacher's Educational Attainment 52

Teaching Experience 53

Instructional Materials and Equipment 54

Students' Attitude Towards Chemistry..... 55

Relationship of Previous Study with the Present Study .. 58

3 RESEARCH DESIGN AND METHODOLOGY

Research Design 60

Respondent Schools 61

Respondents 61

Questionnaire 62

Achievement Test 62

Validation of Instrument 63

Administration of the Questionnaires 63

Data Gathering Procedures 66

Statistical Treatment of Data 67

4 PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

Specific Question No. 1 73

Specific Question No. 2 78

Specific Question No. 3 83

Specific Question No. 4 86

Specific Question No. 5 88

Specific Question No. 6 89

Specific Question No. 7 91

Specific Question No. 8 100

Implications of the Findings to Chemistry Education 101

5 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

REFERENCES 119

APPENDICES

A Endorsement Letter 123

B Letter of Request 124

C Faculty – Respondent Profile 125

D School Related Factors 127

E Attitude Towards Chemistry..... 129

F Table of Specifications 130

G Achievement Test in Chemistry 132

H Curriculum Vitae 147

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LIST OF FIGURES

FIGURE	PAGE
The variables and their relationship	13

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LIST OF TABLES

TABLE		PAGE
1	Profile of student-respondents according to age	73
2	Profile of student-respondents according to gender	74
3	Profile of student-respondents according to their achievement in Math in the secondary level	75
4	Profile of student-respondents according to their achievement in Science in the secondary level	76
5	Student-respondents attitude towards Chemistry 1	77
6	Profile of the faculty-respondents according to educational attainment	79
7	Profile of the faculty-respondents according to number of years teaching Chemistry 1	80
8	Profile of faculty-respondents according to their length of service	81
9	Profile of faculty-respondents according to their teaching methodology	82
10	Levels of school-related factors in terms of syllabi	84
11	Levels of school-related factors in terms of instructional materials	85
12	Levels of school-related factors in terms of equipment	86
13	Achievement of student-respondents in Chemistry 1	87
14	The cognitive levels in Chemistry 1 of the student-respondents	88

15	Learning difficulties in Chemistry 1 of student-respondents	90
16	Differences in achievement in Chemistry 1 of student-respondents according to their gender	92
17	Differences in achievement in Chemistry 1 of the student-respondents according to age	93
18	Differences in student-respondents achievement in Chemistry 1 according to teachers' educational attainment	94
19	Differences in achievement in Chemistry 1 of the student-respondents according to faculty length of service	95
20	Differences in achievement in Chemistry 1 among the student-respondents according to faculty teaching methodology	96
21	Differences in achievement in Chemistry 1 according to the availability of syllabi	97
22	Differences in the achievement in Chemistry 1 among student-respondents according to availability of instructional materials	98
23	Differences in the achievement in Chemistry 1 by the student-respondents according to the adequacy adequacy of equipment	99
24	Relationship between achievement in Chemistry 1 and grades in Math and Science	100