Effects of Collaborative Learning Strategies on Academic Achievement of Students with Hearing Impairment in Mathematics Word Problems in Oyo State, Nigeria

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Certification

This is to certify that Abiodun Teslim BALOGUN, with Matriculation Number LCU/PG/003072 carried out this research work titled Effects of Collaborative Learning Strategies on Academic Achievement of Secondary School Students with Hearing Impairment in Mathematics Word Problems in Oyo State, Nigeria, in the Department of Science Education, Faculty of Education, Lead City University, Ibadan, Oyo state, Nigeria, for the award of Doctor of Philosophy Degree (PhD) in Mathematics Education and this has not been previously submitted to any institution for the award of any degree or certificate.

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Dedication

This research work is dedicated to God Almighty for granting me the strength, resources and ability to complete this work.

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Abstract

There is persistent failure of secondary school students in Mathematics generally and Word Problems in particular in Nigeria. Students with hearing impairment also exhibit weak performance in topics like Algebraic Word Problems. This necessitates the adoption of appropriate learning strategies that promotes social and constructive learning based on social interdependence, constructivist and social learning and development theory. It was on the basis of this that this research work determined the effect of collaborative learning strategies on academic achievement of students with hearing impairment in Algebraic word problems in Oyo State, Nigeria. The study answered seven hypotheses at 0.05 significant level. The study adopted pretest-posttest control group quasi-experimental design, while the population of the study comprised 295. The sample size for this study consisted of 102 Senior Secondary 2 (SS2) students with hearing impairment selected from the four special schools in Oyo state through some sampling techniques. Students Achievement Test in Algebraic Word Problems, (KR-20 = 0.82), Measure of Mindset Scale, Algebraic Word Problems Lesson Plan and Algebraic Word Problems Lesson Notes were used for collecting data. Analysis of covariance was used to analyse the hypotheses. There was no significant main effect of treatment on students with hearing impairment's academic achievement in Algebraic word problems ($F_{(3;\ 99)=}$ 1.865; $p > 0.05$; partial $\eta^2 = 0.062$). There was no significant main effect of types of hearing impairment on students with hearing impairment's achievement in Algebraic word problems ($F_{(1;\ 101)=}$ 2.141; $p > 0.05$; partial $\eta^2 = 0.025$). There was no significant main effect of mindset on students with hearing impairment's achievement in Algebraic word problems ($F_{(1;\ 101)=}$ 3.446; $p > 0.05$; partial $\eta^2 = 0.039$). There was no significant interaction effect of treatment and types of hearing impairment on students with hearing impairment's achievement in Algebraic word problems ($F_{(3;\ 99)=}$ 0.309; $p > 0.05$; partial $\eta^2 = 0.011$). There was no significant interaction effect of treatment and mindset on students with hearing impairment's achievement in Algebraic word problems ($F_{(1;\ 101)=}$ 0.277; $p > 0.05$; partial $\eta^2 = 0.010$). There was no significant interaction effect of mindset and type of hearing impairment on students with hearing impairment's achievement in Algebraic word problems ($F_{(1;\ 101)=}$ 0.002; $p > 0.05$; partial $\eta^2 = 0.000$). There was no significant interaction effect of treatment, mindset and type of hearing impairment on students with hearing impairment's achievement in Algebraic word problems ($F_{(3;\ 99)=}$ 0.478; $p > 0.05$; partial $\eta^2 = 0.017$). It was thus concluded that collaborative learning strategies, mindset and type of hearing impairment have no significant effect on senior secondary school students with hearing impairment's academic achievement in Algebraic word problems. It was suggested that teachers should always consider the learning needs of students and use appropriate collaborative strategies a trial.

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Table of Contents

Title page

Certification i

Dedication ii

Acknowledgement iii

Abstract vi

Table of contents vii

Chapter One: Introduction

1.1 Background to the Study 1

1.2 Statement of the problem 19

1.3 Aims and Objectives 19

1.4 Hypotheses 21

1.5 Significance of the study 21

1.6 Scope of the study 22

1.7 Limitations of the study 23

1.8 Operational Definition of terms 24

Endnotes 26

Chapter Two: Literature Review

2.1 Conceptual Review

2.1.1 Collaborative learning 32

2.1.2 Jigsaw I strategy 39

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2.1.3 Peer tutoring strategy 40

2.1.4 Think-Pair-Share strategy 45

2.1.5 Algebraic Word Problems 47

2.1.6 Academic Achievement 48

2.1.7 Hearing Impairment 50

2.1.8 Mindset 55

2.2 Theoretical Review

2.2.1 Vgotsky's Theory of Constructivist Learning 57

2.2.2 Deutch's Theory of Social Interdependence 59

2.2.3 Vygotsky's Theory of Social Learning and Development 60

2.3 Review of Empirical Studies

2.3.1 Type of hearing Impairment and Academic Achievement in Algebraic Word Problems 62

2.3.2 Jigsaw I strategy and Academic Achievement in Algebraic Word Problems 67

2.3.3 Peer Tutoring strategy and Academic Achievement in Algebraic Word Problems 71

2.3.4 Think-Pair-Share strategy and Academic Achievement in Algebraic Word Problems 75

2.3.5 Mindset and Academic Achievement in Algebraic Word Problems 80

2.4 Conceptual Framework/Model 84

2.5 Summary of Reviewed Literature 85

Endnotes 87

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Chapter Three: Methodology

3.1	Research design	107
3.2	Population	108
3.3	Sample and Sampling Technique	109
3.4	Research instrument	110
3.5	Validity	112
3.6	Reliability	113
3.7	Procedure for data collection	113
3.8	Procedure for data analysis	118
3.9	Ethical Approval	118
Endnotes		120

Chapter Four: Results and Discussion of Findings

4.1	Presentation of Demographic Analysis of Participants	121
4.2	Presentation of Test Hypotheses	122
4.3	Discussion of Findings	127
Endnotes		143

Chapter Five: Conclusion

5.1	Summary of findings	153
5.2	Conclusion	154
5.3	Recommendations	154
5.4	Contributions to Knowledge	155

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5.5 Suggestions for Further Studies 156

Bibliography 157

Journals 157

Conferences 164

Internet Resources 165

Periodicals 167

Books 171

Unpublished Theses 173

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Appendices

Students Achievement Test on Algebraic Word Problems	174
Algebraic Word Problems Lesson Plan for Experimental Group	183
Algebraic Word Problems Lesson Plan for Control Group	184
Algebraic Word Problems Lesson Notes I for SS II Experimental Group	185
Algebraic Word Problems Lesson Notes II for SS II Experimental Group	188
Algebraic Word Problems Lesson Notes III for SS II Experimental Group	191
Algebraic Word Problems Lesson Notes I for SS II Control Group	195
Algebraic Word Problems Lesson Notes II for SS II Control Group	199
Algebraic Word Problems Lesson Notes III for SS II Control Group	202
Measure of Mindset Scale	205
Biodata	206
University Compliance Certificate	208

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List of Tables

3.1	4 x 2 x 2 Factorial Matrix of the Design	106
3.2	Distribution of Population of the Study	107
3.3	Table of Specification for Student Achievement Test	109
4.1	Presentation of Demographic Analysis of Respondents	115
4.2	Analysis of Covariance (ANCOVA) of Post-Achievement by Treatment, Mindset and Type of Hearing Impairment	116
4.3	Estimated Marginal Means for the Post-Achievement by Treatment and Control Group	117
4.4	Estimated Marginal Mean for Post-Achievement by Type of Hearing Impairment	118
4.5	Estimated Marginal Mean for Post-Achievement by Mindset	119

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List of Acronyms

CLS	Collaborative Learning Strategy
JS	Jigsaw Strategy
PTS	Peer Tutoring Strategy
TPS	Think-Pair-Share
SHI	Students with Hearing Impairment
SATWP	Students Achievement Test on Algebraic Word Problems
MOM	Measure of Mindset

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