

**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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Education, Lead City University, Ibadan, 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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Date

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.

Keywords: Jigsaw I strategy, Peer-Tutoring strategy, Think-Pair-Share strategy, Students with hearing Impairment, Algebraic Word problems.

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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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