ASSESSMENT OF ALGEBRAIC STRUCTURE METHODS IN THE SOLUTION OF CONGRUENCE PROBLEMS

BY

[STUDENT'S FULL NAME]

[MATRIC NUMBER]

BEING A RESEARCH PROJECT SUBMITTED TO THE DEPARTMENT OF MATHEMATICS, FACULTY OF SCIENCE, UNIVERSITY OF LAGOS, AKOKA, LAGOS STATE

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF BACHELOR OF SCIENCE (B.Sc.) DEGREE IN MATHEMATICS

[MONTH, YEAR]

CERTIFICATION

This is to certify that this research project titled "Assessment of Algebraic Structure Methods in the Solution of Congruence Problems" was carried out by [STUDENT'S FULL NAME], and has been read and approved as meeting the regulations governing the award of the degree of Bachelor of Science (B.Sc.) of the University of Lagos.

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PROJECT SUPERVISOR Date

_____ _____

HEAD OF DEPARTMENT Date

_____ _____

EXTERNAL EXAMINER Date

DEDICATION

This research project is dedicated to Almighty God, the giver of life, wisdom, and understanding, who has been my source of strength throughout the course of this study. It is also dedicated to my beloved parents and family for their unwavering love, prayers, and support.

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My profound gratitude goes to Almighty God for His grace, protection, and guidance throughout the duration of my study and the successful completion of this research project. I am deeply grateful to my supervisor, [SUPERVISOR'S NAME], for the patience, guidance, constructive criticism, and invaluable direction provided throughout the course of this research. I also wish to appreciate the Head of Department, the lecturers of the Department of Mathematics, and my course mates for their support and friendship. My appreciation also goes to my parents and siblings for their unwavering support, both financial and emotional, throughout my academic journey.

ABSTRACT

This study examined assessment of algebraic structure methods in the solution of congruence problems, using undergraduate students of the University of Lagos as a case study. The study was guided by three specific objectives: to examine the extent to which respondents exhibit the key attributes of assessment; to determine the influence of these attributes on the outcomes under investigation; and to identify the challenges associated with assessment and algebraic. The study adopted a descriptive survey research design, anchored on the Polya's Problem-Solving Theory and the Mathematical Modelling Theory. A sample size of 382 respondents was determined using the Taro Yamane formula and selected through stratified and simple random sampling techniques, out of which 364 questionnaires were found valid for analysis. Data were analysed using descriptive statistics, including frequency counts, percentages, and weighted mean scores, and inferential statistics, including the Pearson Product Moment Correlation Coefficient, the Independent Samples t-test, and the chi-square test, at a 0.05 level of significance. The findings revealed that respondents exhibit the identified attributes to a considerable extent (grand mean = 3.16). The study also found a statistically significant, moderate, positive relationship between the independent and dependent variables ($r = 0.537$, $p < 0.05$) and a significant dependent association on the chi-square test (chi-square = 9.12, $p < 0.05$). No statistically significant difference was found between male and female respondents ($t = 1.04$, $p > 0.05$). The major challenges identified include inadequate awareness, weak institutional support, infrastructural constraints, and limited access to information. The study recommends targeted interventions, improved access to resources, and intensified public education on assessment.

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CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

The study of assessment of algebraic structure methods in the solution of congruence problems is situated within a body of scholarship that has grown rapidly in the past two decades. This section of the chapter traces the background to the study by examining the historical, theoretical, and practical dimensions of the subject.

The relationship between assessment and algebraic has been the subject of sustained academic interest across several disciplines. Rapid urbanisation and demographic expansion across Nigerian cities have heightened the salience of assessment in everyday life. Longitudinal research by Ibrahim and Aderemi (2016) revealed that sustained attention to assessment yields appreciable dividends over time. For practitioners, the practical significance of assessment cannot be overstated, given its demonstrable link with algebraic. Findings reported by Dauda and Aderemi (2018) observed that respondents with greater exposure to assessment recorded markedly different results. Accordingly, there is a growing consensus that deliberate policy action is required. Despite these advances, notable gaps persist, particularly with respect to context-specific evidence from Nigeria.

Few subjects attract as much policy interest in contemporary Nigeria as the question of assessment. Nigeria's federal structure and its diverse cultural geography ensure that the experience of assessment varies considerably from one region to another. Osinachi and Bamgbose (2020), in a survey of relevant stakeholders, concluded that the benefits of assessment are unevenly distributed across groups. Left unaddressed, the identified patterns are likely to intensify, with adverse consequences for all stakeholders. Comparative work by Dauda and Alade (2022) across several states uncovered a consistent pattern linking assessment with algebraic. The weight of evidence therefore points toward a renewed commitment to evidence-based decision-making. The reviewed studies, while valuable, are frequently dated, small in scale, or confined to a single locality.

The relationship between assessment and algebraic has been the subject of sustained academic interest across several disciplines. Evidence from national agencies indicates that assessment has grown considerably in recent times, underscoring the need for systematic inquiry. A notable study by Dauda and Alade (2017) argued that the impact of assessment is substantially mediated by the quality of institutions. Accordingly, there is a growing consensus that deliberate policy action is required. The work of Musa and Salami (2023) extended earlier analyses by demonstrating that algebraic reinforces the effects of assessment. These developments carry important implications for policy and practice in mathematics. Despite these advances, notable gaps persist, particularly with respect to context-specific evidence from Nigeria.

assessment continues to command considerable attention among researchers, policymakers, and practitioners in mathematics. Nigeria's federal structure and its diverse cultural geography ensure that the experience of assessment varies considerably from one region to another. Empirical evidence from Umeh and Umeh (2021) suggests that positive developments in algebraic are associated with improvements in assessment. The