

MISCONCEPTIONS ABOUT ACIDS AND BASES AMONG SECONDARY STUDENTS

BY

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DEGREE IN SCIENCE EDUCATION

[MONTH, YEAR]

CERTIFICATION

This is to certify that this research project titled "Misconceptions About Acids and Bases Among Secondary Students" 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.

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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ABSTRACT

This study examined misconceptions about acids and bases among secondary students, 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 misconceptions; to determine the influence of these attributes on the outcomes under investigation; and to identify the challenges associated with misconceptions and about. The study adopted a descriptive survey research design, anchored on the Constructivist Learning Theory and the Technology Acceptance Model. A sample size of 386 respondents was determined using the Taro Yamane formula and selected through stratified and simple random sampling techniques, out of which 351 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 ($r = 0.493$, $p < 0.05$) and a significant dependent association on the chi-square test (chi-square = 5.57, $p < 0.05$). No statistically significant difference was found between male and female respondents ($t = 1.33$, $p > 0.05$). 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 misconceptions.

TABLE OF CONTENTS

Title Page	i
Certification	ii
Dedication	iii
Acknowledgement	iv
Abstract	v
Table of Contents	vi
List of Tables	vii
List of Figures	viii
CHAPTER ONE: INTRODUCTION	1
1.1 Background to the Study	1
1.2 Statement of the Problem	4
1.3 Objectives of the Study	7
1.4 Research Questions	7
1.5 Research Hypotheses	7
1.6 Significance of the Study	8
1.7 Scope and Limitation of the Study	11
1.8 Definition of Terms	13
CHAPTER TWO: LITERATURE REVIEW	15
2.1 Conceptual Review	15
2.1.1 Concept of Misconceptions	15
2.1.2 Concept of About	16
2.1.3 Concept of Acids	18
2.2 Theoretical Framework	20
2.2.1 Constructivist Learning Theory	20
2.2.2 Technology Acceptance Model	21
2.2.3 Cognitive Load Theory	22
2.2.4 Experiential Learning Theory	24
2.3 Empirical Review	25
2.3.1 Early Studies on misconceptions	25
2.3.2 Recent Nigerian Evidence on misconceptions	27
2.3.3 Misconceptions and about	29
2.3.4 Comparative Perspectives across Africa	30
2.4 Summary of Literature Review	32
CHAPTER THREE: RESEARCH METHODOLOGY	34
3.1 Research Design	34
3.2 Population of the Study	34
3.3 Sample Size and Sampling Technique	35
3.4 Sources of Data Collection	36
3.5 Research Instrument	37
3.6 Validity and Reliability of the Instrument	38
3.7 Method of Data Analysis	39
3.7.1 Administration of the Instrument	40

3.8 Ethical Considerations	41
CHAPTER FOUR: DATA PRESENTATION, ANALYSIS AND INTERPRETATION	43
4.1 Data Presentation	43
4.2 Demographic Characteristics of Respondents	43
4.3 Analysis of Research Questions	44
4.4 Test of Hypotheses	45
4.5 Discussion of Findings	46
CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS	52
5.1 Summary	52
5.2 Conclusion	53
5.3 Recommendations	54
5.4 Suggestions for Further Studies	54
REFERENCES	56
APPENDIX	58

LIST OF TABLES

Table 2.1: Summary of the Review of Related Literature	33
Table 2.2: Operationalisation of the Study Variables	33
Table 3.1: Population of the Study and Sampling Technique	42
Table 3.2: Validity and Reliability of the Research Instrument	42
Table 4.1: Gender Distribution of Respondents	49
Table 4.2: Age Distribution of Respondents	49
Table 4.3: Educational Attainment of Respondents	50
Table 4.4: Weighted Mean Analysis of Research Question One	50
Table 4.5: Weighted Mean Analysis of Research Question Two	50
Table 4.6: Correlation Summary between the Independent and Dependent Variables	50
Table 4.7: Independent Samples t-test by Gender	50
Table 4.8: Chi-square Test of Association	50

LIST OF FIGURES

Figure 1.1: Conceptual Framework of the Study	14
Figure 3.1: Science Education Research Context	42
Figure 4.1: Gender Distribution of Respondents	49
Figure 4.2: Age Distribution of Respondents	49

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

The study of misconceptions about acids and bases among secondary students 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 phenomenon of misconceptions, while not new, has acquired fresh analytical urgency in Nigeria. Rapid urbanisation and demographic expansion across Nigerian cities have heightened the salience of misconceptions in everyday life. Evidence assembled by Osinachi and Oyelaran (2015) across twelve states underscored the heterogeneity of outcomes linked to misconceptions. Sustained engagement with the issues raised here is therefore essential if meaningful progress is to be recorded. The work of Adeniyi and Bamgbose (2023) extended earlier analyses by demonstrating that about reinforces the effects of misconceptions. Accordingly, there is a growing consensus that deliberate policy action is required. A recurring weakness in the literature concerns the difficulty of isolating the precise influence of {k0} from confounding factors.

In both global and African literatures, misconceptions is now regarded as a key index of institutional performance. Globalisation and technological change have intensified both the opportunities and the challenges associated with misconceptions. An examination by Aderemi and Chukwu (2019) attributed much of the observed variation in outcomes to institutional capacity and policy continuity. These observations collectively invite a reconsideration of standard assumptions regarding about. Comparative work by Ogunlana and Nnamdi (2022) across several states uncovered a consistent pattern linking misconceptions with about. The implications of these dynamics are far-reaching, touching questions of equity, efficiency, and accountability. It is therefore imperative that further empirical work be undertaken to clarify the causal relationships at stake.

Over the past two decades, misconceptions has become increasingly significant within the Nigerian landscape and beyond. Nigeria's federal structure and its diverse cultural geography ensure that the experience of misconceptions varies considerably from one region to another. Longitudinal research by Ogunlana and Nnamdi (2016) revealed that sustained attention to misconceptions yields appreciable dividends over time. Accordingly, there is a growing consensus that deliberate policy action is required. Studies by Adekunle and Oyelaran (2019) largely support the view that misconceptions exerts a measurable influence on outcomes of interest. For practitioners, the practical significance of misconceptions cannot be overstated, given its demonstrable link with about. Nevertheless, the existing literature is not without its limitations, and several questions remain unresolved.

The phenomenon of misconceptions, while not new, has acquired fresh analytical urgency in Nigeria. The socio-cultural diversity of Nigeria implies that responses to misconceptions must be differentiated rather than uniform. A notable study by Olawale and Bello (2017) argued that the impact of misconceptions is substantially mediated by the quality of institutions. These developments carry important implications for