

WATER EXPERIMENTS AND UNDERSTANDING OF FLOATING AND SINKING

BY

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DEGREE IN SCIENCE EDUCATION

[MONTH, YEAR]

CERTIFICATION

This is to certify that this research project titled "Water Experiments and Understanding of Floating and Sinking" 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 water experiments and understanding of floating and sinking, 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 water; to determine the influence of these attributes on the outcomes under investigation; and to identify the challenges associated with water and experiments. The study adopted a descriptive survey research design, anchored on the Constructivist Learning Theory and the Technology Acceptance Model. A sample size of 413 respondents was determined using the Taro Yamane formula and selected through stratified and simple random sampling techniques, out of which 379 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 = 2.96). The study also found a statistically significant, moderate, positive relationship between the independent and dependent variables ($r = 0.558$, $p < 0.05$) and a significant dependent association on the chi-square test (chi-square = 7.82, $p < 0.05$). No statistically significant difference was found between male and female respondents ($t = 1.12$, $p > 0.05$). 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 water.

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CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

The study of water experiments and understanding of floating and sinking 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 salience of water in national discourse has grown steadily, driven by changing social conditions and technological penetration. National policies and programmes have sought, with varying degrees of success, to respond to the realities of water and experiments. Evidence assembled by Adebayo and Ogbeide (2015) across twelve states underscored the heterogeneity of outcomes linked to water. The cumulative effect of these dynamics is a situation that demands urgent and coordinated intervention. Comparative work by Olawale and Kalu (2022) across several states uncovered a consistent pattern linking water with experiments. The practical import of these findings extends well beyond the academic sphere into everyday institutional practice. Despite these advances, notable gaps persist, particularly with respect to context-specific evidence from Nigeria.

Debates on national transformation repeatedly return to the role of water and its attendant dynamics. Globalisation and technological change have intensified both the opportunities and the challenges associated with water. An examination by Adebayo and Bakare (2019) attributed much of the observed variation in outcomes to institutional capacity and policy continuity. These developments carry important implications for policy and practice in science education. Empirical evidence from Salami and Bello (2021) suggests that positive developments in experiments are associated with improvements in water. Such findings reinforce the argument that water deserves a place of priority on the development agenda. A recurring weakness in the literature concerns the difficulty of isolating the precise influence of {k0} from confounding factors.

Scholars have long recognised water as a critical determinant of outcomes in science education. Federal and state governments have initiated several reforms, yet implementation gaps continue to constrain progress in matters of water. An examination by Salami and Bello (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 experiments. The work of Bello and Umeh (2023) extended earlier analyses by demonstrating that experiments reinforces the effects of water. Such findings reinforce the argument that water deserves a place of priority on the development agenda. Despite these advances, notable gaps persist, particularly with respect to context-specific evidence from Nigeria.

The relationship between water and experiments has been the subject of sustained academic interest across several disciplines. Nigeria's federal structure and its diverse cultural geography ensure that the experience of water varies considerably from one region to another. Longitudinal research by Salami and Ogbeide (2016) revealed that sustained attention to water yields appreciable dividends over time. These observations collectively invite a reconsideration of standard assumptions regarding experiments. Longitudinal research by Adebayo and Olawale (2016) revealed that sustained attention to water yields appreciable dividends over time.