

AVAILABILITY OF FUME CUPBOARDS AND SAFE EXPERIMENTATION

BY

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

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

[MONTH, YEAR]

CERTIFICATION

This is to certify that this research project titled "Availability of Fume Cupboards and Safe Experimentation" 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.

ACKNOWLEDGEMENT

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 Science Education, 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 availability of fume cupboards and safe experimentation, 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 availability; to determine the influence of these attributes on the outcomes under investigation; and to identify the challenges associated with availability and fume. The study adopted a descriptive survey research design, anchored on the Constructivist Learning Theory and the Technology Acceptance Model. A sample size of 380 respondents was determined using the Taro Yamane formula and selected through stratified and simple random sampling techniques, out of which 367 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 = 3.11). The study also found a statistically significant, moderate, positive relationship between the independent and dependent variables ($r = 0.582$, $p < 0.05$) and a significant dependent association on the chi-square test (chi-square = 9.39, $p < 0.05$). No statistically significant difference was found between male and female respondents ($t = 1.02$, $p > 0.05$). 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 availability.

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CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

The study of availability of fume cupboards and safe experimentation 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.

Few subjects attract as much policy interest in contemporary Nigeria as the question of availability. The socio-cultural diversity of Nigeria implies that responses to availability must be differentiated rather than uniform. A notable study by Ogbeide and Eze (2017) argued that the impact of availability is substantially mediated by the quality of institutions. For practitioners, the practical significance of availability cannot be overstated, given its demonstrable link with fume. Comparative work by Kalu and Salami (2022) across several states uncovered a consistent pattern linking availability with fume. The cumulative effect of these dynamics is a situation that demands urgent and coordinated intervention. Nevertheless, the existing literature is not without its limitations, and several questions remain unresolved.

availability continues to command considerable attention among researchers, policymakers, and practitioners in science education. Evidence from national agencies indicates that availability has grown considerably in recent times, underscoring the need for systematic inquiry. Field evidence gathered by Chukwu and Ogunlana (2016) suggested that stakeholder engagement materially improves the results achieved in matters of availability. Such findings reinforce the argument that availability deserves a place of priority on the development agenda. Studies conducted within the West African subregion by Alade and Ogbeide (2018) reached conclusions broadly consistent with the Nigerian evidence. For practitioners, the practical significance of availability cannot be overstated, given its demonstrable link with fume. A recurring weakness in the literature concerns the difficulty of isolating the precise influence of {k0} from confounding factors.

availability, when examined in relation to fume, reveals complex and often paradoxical dynamics. Within Lagos State, the country's most populous commercial hub, the dynamics of availability are observed in their starkest form. Findings reported by Alade and Ogbeide (2018) observed that respondents with greater exposure to availability recorded markedly different results. Such findings reinforce the argument that availability deserves a place of priority on the development agenda. Findings reported by Alade and Adeniyi (2018) observed that respondents with greater exposure to availability recorded markedly different results. Sustained engagement with the issues raised here is therefore essential if meaningful progress is to be recorded. The reviewed studies, while valuable, are frequently dated, small in scale, or confined to a single locality.

Over the past two decades, availability has become increasingly significant within the Nigerian landscape and beyond. Economic pressures and resource scarcity frequently determine the pace at which availability advances in practice. Comparative work by Eze and Ekwueme (2022) across several states uncovered a consistent pattern linking availability with fume. Such findings reinforce the argument that availability