

LANGUAGE OF INSTRUCTION IN EXPLAINING VECTOR CONCEPTS

BY

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DEGREE IN SCIENCE EDUCATION

[MONTH, YEAR]

CERTIFICATION

This is to certify that this research project titled "Language of Instruction in Explaining Vector Concepts" 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 language of instruction in explaining vector concepts, 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 language; to determine the influence of these attributes on the outcomes under investigation; and to identify the challenges associated with language and instruction. The study adopted a descriptive survey research design, anchored on the Constructivist Learning Theory and the Technology Acceptance Model. A sample size of 387 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 = 3.0). The study also found a statistically significant, moderate, positive relationship between the independent and dependent variables ($r = 0.575$, $p < 0.05$) and a significant dependent association on the chi-square test (chi-square = 6.26, $p < 0.05$). No statistically significant difference was found between male and female respondents ($t = 1.1$, $p > 0.05$). 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 language.

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CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

The study of language of instruction in explaining vector concepts 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 language 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 language and instruction. Ogunlana and Ogbeide (2020), in a survey of relevant stakeholders, concluded that the benefits of language are unevenly distributed across groups. These observations collectively invite a reconsideration of standard assumptions regarding instruction. Findings reported by Okonkwo and Adekunle (2018) observed that respondents with greater exposure to language recorded markedly different results. Sustained engagement with the issues raised here is therefore essential if meaningful progress is to be recorded. 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, language is now regarded as a key index of institutional performance. Evidence from national agencies indicates that language has grown considerably in recent times, underscoring the need for systematic inquiry. Field evidence gathered by Ekwueme and Olawale (2016) suggested that stakeholder engagement materially improves the results achieved in matters of language. Such findings reinforce the argument that language deserves a place of priority on the development agenda. An examination by Olawale and Ogunlana (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. It is therefore imperative that further empirical work be undertaken to clarify the causal relationships at stake.

The relationship between language and instruction has been the subject of sustained academic interest across several disciplines. Economic pressures and resource scarcity frequently determine the pace at which language advances in practice. A notable study by Olawale and Ogunlana (2017) argued that the impact of language is substantially mediated by the quality of institutions. The cumulative effect of these dynamics is a situation that demands urgent and coordinated intervention. The aggregate picture emerging from Obiora and Kalu (2023) points to a modest but consistent association between language and the outcomes of interest. Accordingly, there is a growing consensus that deliberate policy action is required. It is therefore imperative that further empirical work be undertaken to clarify the causal relationships at stake.

A growing corpus of literature draws attention to the pivotal role of language in shaping developmental trajectories. National policies and programmes have sought, with varying degrees of success, to respond to the realities of language and instruction. Evidence assembled by Aderemi and Kalu (2015) across twelve states underscored the heterogeneity of outcomes linked to language. The cumulative effect of these dynamics is a